

NEWS RELEASE LOG

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-01

January 6, 1978

NASA AWARDS SHUTTLE RADIO CONTRACT TO RCA

The NASA Johnson Space Center has awarded a fixed-price-incentive contract to RCA Corporation Government Communications Systems, Camden, New Jersey, for development and manufacture of the Space Shuttle extravehicular activity/air traffic control (EVA/ATC) communications system.

RCA will design, develop, manufacture, certify, test and deliver flight-qualified EVA/ATC transceivers for Shuttle Orbiters for radio communications during "space walks" and during landing approaches after reentry from orbit. One version of the transceiver will be mounted on Orbiter spacesuits.

The basic contract has a target value of \$8,645,000, with an option for additional transceivers in excess of one million dollars to be exercised.

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Space Administration

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Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-02

January 6, 1978

ORBITER CONTRACT SUPPLEMENT COVERS 10 CONTRACT CHANGES

The NASA Johnson Space Center has signed a supplemental agreement to the Rockwell International Corporation Space Shuttle Orbiter contract covering 10 design changes and additions. The Orbiter contract is cost-plus-award fee, but most contract changes are on a cost-plus fixed-fee basis.

Valued at \$2,503,425, the supplement brings the total estimated value of the Rockwell contract to more than \$3.2 billion.

Covered in the supplemental agreement are 10 previously-approved proposals, including a propellant investigation, overland move of Orbiter 101 from Palmdale to Dryden Flight Research Center, installation of an Orbiter closed-circuit TV system, an Orbiter intercom system for approach-and-landing tests, Boeing 747 carrier aircraft horizontal tail structure instrumentation load calibration, analysis of external tank and solid strap-on booster induced heating upon the Orbiter, and aid in carrying out the Orbiter Experiments Project.

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Also, ground-support equipment redesign, speed/time simulation of the Orbiter auxiliary power unit, and deletion of galley ground-support equipment.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

RELEASE NO: 78-03

For Release
1 p.m., Monday
January 16, 1978

ALSO RELEASED AT NASA HEADQUARTERS

NASA SELECTS 35 ASTRONAUT CANDIDATES

NASA Administrator, Dr. Robert A. Frosch, today announced the selection of 35 new astronaut candidates for the Space Shuttle program.

This group of candidates will report to Johnson Space Center on July 1, 1978. There they will join the astronauts currently on flight status.

In making the announcement, Dr. Frosch said: "The long and difficult task of selecting the most qualified candidates for the Space Shuttle program has been concluded and we are very pleased with the results. We have selected an outstanding group of women and men who represent the most competent, talented and experienced people available to us today."

- more -

NASA received 8,079 applications during a year-long recruiting period which ended June 30, 1977.

Since August, 208 finalists have been interviewed and have undergone medical examinations at NASA's Johnson Space Center, Houston, Texas.

After two years of training and evaluation at the Johnson Space Center, successful candidates will become astronauts and enter the Shuttle training program leading to selection on a Space Shuttle flight crew.

Pilots will operate the Space Shuttle Orbiter, maneuvering it in Earth orbit and flying it to Earth for a runway landing.

Mission specialist astronauts will have the overall responsibility for the coordination, with the commander and pilot, of Space Shuttle operations in the areas of crew activity planning, consumables usage, and other Space Shuttle activities affecting experiment operations. They may participate in extravehicular activities (space walks), perform special payload handling or maintenance operations using the Space Shuttle remote manipulator system, and assist in specific experiment operation at the discretion of the experiment sponsor.

The newly selected candidates include 14 civilians and 21 military officers. Of the group, six are women, and four are minorities. There are currently 27 astronauts on active status (17 pilots and 10 scientist astronauts) and one on leave of absence.

A list of the new astronaut candidates is attached.

ASTRONAUT CANDIDATES

| | | |
|------------------------------|-----------------|--------------------|
| Guion "Guy" S. BLUFORD | US Air Force | Mission Specialist |
| Daniel "Dan" C. BRANDENSTEIN | US Navy | Pilot |
| James "Jim" F. BUCHLI | US Marine Corps | Mission Specialist |
| Michael L. COATS | US Navy | Pilot |
| Richard "Dick" O. COVEY | US Air Force | Pilot |
| John O. CREIGHTON | US Navy | Pilot |
| John M. FABIAN | US Air Force | Mission Specialist |
| Anna L. FISHER | Civilian | Mission Specialist |
| Dale A. GARDNER | US Navy | Mission Specialist |
| Robert "Hoot" L. GIBSON | US Navy | Pilot |
| Frederick "Fred" D. GREGORY | US Air Force | Pilot |
| Stanley D. "Dave" GRIGGS | Civilian | Pilot |
| Terry J. HART | Civilian | Mission Specialist |
| Frederick "Rick" H. HAUCK | US Navy | Pilot |
| Steven "Steve" A. HAWLEY | Civilian | Mission Specialist |
| Jeffrey "Jeff" A. HOFFMAN | Civilian | Mission Specialist |
| Shannon W. LUCID | Civilian | Mission Specialist |
| Jon A. MC BRIDE | US Navy | Pilot |
| Ronald "Ron" E. MC NAIR | Civilian | Mission Specialist |
| Richard M. "Mike" MULLANE | US Air Force | Mission Specialist |
| Steven R. NAGEL | US Air Force | Pilot |
| George D. NELSON | Civilian | Mission Specialist |
| Ellison "El" S. Onizuka | US Air Force | Mission Specialist |
| Judith "Judy" A. RESNIK | Civilian | Mission Specialist |
| Sally K. RIDE | Civilian | Mission Specialist |
| Francis R. "Dick" SCOBEE | US Air Force | Pilot |
| Margaret R. "Rhea" SEDDON | Civilian | Mission Specialist |
| Brewster H. SHAW, JR. | US Air Force | Pilot |
| Loren J. SHRIVER | US Air Force | Pilot |
| Robert "Bob" L. STEWART | US Army | Mission Specialist |
| Kathryn "Kathy" D. SULLIVAN | Civilian | Mission Specialist |
| Norman "Norm" E. THAGARD | Civilian | Mission Specialist |
| James "Jim" D. VAN HOFTEN | Civilian | Mission Specialist |
| David "Dave" M. WALKER | US Navy | Pilot |
| Donald "Don" E. WILLIAMS | US Navy | Pilot |

NAME: Guion "Guy" S. Bluford, Jr., MAJ, USAF (PhD)

BIRTH DATE AND PLACE: November 22, 1942 Philadelphia, PA

CURRENT RESIDENCE: Dayton, OH

EDUCATION: Overbrook Senior High School, Philadelphia, PA
BS, Aerospace Engineering, Pennsylvania State University, 1964
MS, Aerospace Engineering, Air Force Institute of Technology, 1974
PhD, Aerospace Engineering, Air Force Institute of Technology, 1977

MARITAL STATUS: Married to the former Linda M. Tull of Philadelphia, PA

CHILDREN: Two

PRESENT POSITION: Chief, Aerodynamics and Airframe Branch
Aeromechanics Division, Air Force Dynamics Laboratory
Wright-Patterson AFB, OH 45433

PARENTS - Father: (Deceased) -
Mother: Lolita B. Bluford of Philadelphia, PA

NAME: James "Jim" F. Buchli, LT. COL., USMC

BIRTH DATE AND PLACE: June 20, 1945 New Rockford, SD

CURRENT RESIDENCE: Lexington Park, MD

EDUCATION: Fargo Central High School, Fargo, ND
BS, USN Academy, 1967
MS, Aeronautical Systems, University of West Florida, 1975

MARITAL STATUS: Married to the former Sandra J. Oliver

CHILDREN: Two

PRESENT POSITION: Student
U. S. Naval Flight Test Engineering School
Patuxent River, MD 20670

PARENTS: Mr. and Mrs. Martin A. Buchli of Fargo, ND

NAME: Daniel "Dan" C. Brandenstein, LCDR, USN

BIRTH DATE AND PLACE: January 17, 1943 Watertown, WI

CURRENT RESIDENCE: Oak Harbor, WA

EDUCATION: Watertown High School, Watertown, WI
BS, Mathematics/Physics, University of Wisconsin, 1965

MARITAL STATUS: Married to the former Jane A. Wade of Amery, WI

CHILDREN: One

PRESENT POSITION: Naval Aviator and Maintenance Officer
Attack Squadron One Four Five
NAS Whidbey Island, Oak Harbor, WA 98278

PARENTS: Mr. and Mrs. Walter Brandenstein of Watertown, WI

NAME: Michael L. Coats, LCDR, USN

BIRTH DATE AND PLACE: January 16, 1946 Sacramento, CA

CURRENT RESIDENCE: Great Mills, MD

EDUCATION: Ramona High School, Riverside, CA
BS, USN Academy, 1968
MS, Admin. of Science & Technology, George Washington University, 1977

MARITAL STATUS: Married to the former Diane E. Carson of Oklahoma City, OK

CHILDREN: One

PRESENT POSITION: Student
U. S. Navy Postgraduate School
Monterey, CA 93940

PARENTS: Mr. and Mrs. Loyd A. Coats of Fort Collins, CO

NAME: Richard "Dick" O. Covey, MAJ, USAF

BIRTH DATE AND PLACE: August 1, 1946 Fayetteville, AR

CURRENT RESIDENCE: Fort Walton Beach, FL

EDUCATION: Choctawhatchee High School, Shalimar, FL
BS, USAF Academy, 1968
MS, Aeronautical/Astronautical Engineering, Purdue University, 1969

MARITAL STATUS: Married to the former Kathleen Allbaugh of Indianola, IA

CHILDREN: Two

PRESENT POSITION: Commander, F-15 Joint Test Force
Air Force Test Center Detachment 2
Eglin AFB, FL 32542

PARENTS: Mr. and Mrs. Charles D. Covey of Fort Walton Beach, FL

NAME: John O. Creighton, LCDR, USN

BIRTH DATE AND PLACE: April 28, 1943 Orange, TX

CURRENT RESIDENCE: Lexington Park, MD

EDUCATION: Ballard High School, Seattle, WA
BS, USN Academy, 1966

MARITAL STATUS: Unmarried

CHILDREN: None

PRESENT POSITION: Test Pilot
Naval Air Test Center
Patuxent River, MD 20670

PARENTS: Mr. and Mrs. Wilbur O. Creighton of Seattle, WA

NAME: John M. Fabian, MAJ, USAF (PhD)

BIRTH DATE AND PLACE: January 28, 1939 Goosecreek, TX

CURRENT RESIDENCE: Colorado Springs, CO

EDUCATION: Pullman High School, Pullman, WA
BS, Mechanical Engineering, Washington State University, 1962
MS, Aerospace Engineering, Air Force Institute of Technology, 1964
PhD, Aeronautics/Astronautics, University of Washington, 1974

MARITAL STATUS: Married to the former Donna K. Buboltz of Lewiston, ID

CHILDREN: Two

PRESENT POSITION: Assistant Professor of Aeronautics
USAF Academy, CO 80840

PARENTS: Mr. and Mrs. Felix M. Fabian, Sr. of Corpus Christi, TX

NAME: Anna L. Fisher, MD

BIRTH DATE AND PLACE: August 24, 1949 Albany, NY

CURRENT RESIDENCE: Rancho Palos Verdes, CA

EDUCATION: San Pedro High School, San Pedro, CA
BS, Chemistry, University of California, Los Angeles, 1971
MD, University of California, Los Angeles, School of Medicine, 1976

MARITAL STATUS: Married to Dr. William "Bill" F. Fisher of Dallas, TX

CHILDREN: None

PRESENT POSITION: Physician
Los Angeles, CA

PARENTS: Mr. and Mrs. Riley F. Tingle of San Pedro, CA

NAME: Robert "Hoot" L. Gibson, LT, USN
BIRTH DATE AND PLACE: October 30, 1946 Cooperstown, NY
CURRENT RESIDENCE: Leonardtown, MD
EDUCATION: Huntington High School, Huntington, NY
BS, Aeronautical Engineering, California Polytechnic State Univ., 1969
MARITAL STATUS: Married to the former Cathy M. Von Epps of Santa Barbara, CA
CHILDREN: One
PRESENT POSITION: Test Pilot
Naval Air Test Center
Patuxent River, MD 20670
PARENTS: Mr. and Mrs. Paul A. Gibson of Westminster, CA

NAME: Frederick "Fred" D. Gregory, MAJ, USAF
BIRTH DATE AND PLACE: January 7, 1941 Washington, DC
CURRENT RESIDENCE: Hampton, VA
EDUCATION: Anacostia High School, Washington, DC
BS, USAF Academy, 1964
MS, Information Systems, George Washington University, 1977
MARITAL STATUS: Married to the former Barbara A. Archer of Newport News, VA
CHILDREN: Two
PRESENT POSITION: Armed Forces Staff College
Norfolk, VA 23511
PARENTS: - Father: (Deceased)
Mother: Nora D. Gregory of Washington, DC

NAME: Stanley D. "Dave" Griggs

BIRTH DATE AND PLACE: September 7, 1939 Portland, OR

CURRENT RESIDENCE: Seabrook, TX

EDUCATION: Lincoln High School, Portland, OR
BS, USN Academy, 1962
MSA, Management Engineering, George Washington University, 1970

MARITAL STATUS: Married to the former Karen F. Kreeb of Port Jefferson, NY

CHILDREN: Two

PRESENT POSITION: Chief, Shuttle Training Aircraft Operations Office
NASA/Johnson Space Center
Houston, TX 77058

PARENTS: Mr. and Mrs. Jack L. Griggs of Deerfield, IL

NAME: Frederick "Rick" H. Hauck, CDR, USN

BIRTH DATE AND PLACE: April 11, 1941 Long Beach, CA

CURRENT RESIDENCE: Oak Harbor, WA

EDUCATION: St. Albans High School, Mt. St. Alban, Washington, DC
BS, General Physics, Tufts University, 1962
MS, Nuclear Engineering, Massachusetts Institute of Technology, 1966

MARITAL STATUS: Married to the former Mary E. Bowman of Washington, DC

CHILDREN: Two

PRESENT POSITION: Executive Officer
Attack Squadron One Four Five
NAS Whidbey Island, Oak Harbor, WA 78278

PARENTS - Father: (Deceased)
Mother: Virginia H. Hauck of Winchester, MA

NAME: Dale A. Gardner, LT, USN

BIRTH DATE AND PLACE: November 8, 1948 Fairmont, MN

CURRENT RESIDENCE: Camarillo, CA

EDUCATION: Savanna Community High School, Savanna, IL
BS, Engineering Physics, University of Illinois, 1970

MARITAL STATUS: Married to the former Sue G. Ticusan of Indianapolis, IN

CHILDREN: One

PRESENT POSITION: Naval Flight Officer
Air Test and Evaluation Squadron Four
NAS Point Mugu, CA 93042

PARENTS: Mr. and Mrs. William R. Gardner of Clinton, IA

NAME: Terry J. Hart

BIRTH DATE AND PLACE: October 27, 1946 Pittsburgh, PA

CURRENT RESIDENCE: Long Valley, NJ

EDUCATION: Mt. Lebanon High School, Pittsburgh, PA
BS, Mechanical Engineering, Lehigh University, 1968
MS, Mechanical Engineering, Massachusetts Institute of Technology, 1969

MARITAL STATUS: Married to the former Wendy M. Eberhardt of Warren, PA

CHILDREN: One

PRESENT POSITION: Technical Staff Member
Bell Telephone Laboratories
Whippany, NJ 07981

PARENTS - Father: Jonathan S. Hart of Somers Point, NJ
Mother: Lillian H. Hufnagel of Delray Beach, FL

NAME: Steven "Steve" A. Hawley, PhD

BIRTH DATE AND PLACE: December 12, 1951 Ottawa, KS

CURRENT RESIDENCE: Santa Cruz, CA

EDUCATION: Salina Central High School, Salina, KS
BA, Astronomy and Physics, University of Kansas, 1973
PhD, Astronomy, University of California, Santa Cruz, 1977

MARITAL STATUS: Unmarried

CHILDREN: None

PRESENT POSITION: Postdoctoral Research Associate
Cerro Tololo Inter-American Observatory
La Serena, Chile

PARENTS: Mr. and Mrs. Bernard R. Hawley of Salina, KS

NAME: Jeffrey "Jeff" A. Hoffman, PhD

BIRTH DATE AND PLACE: November 2, 1944 New York, NY

CURRENT RESIDENCE: Weston, MA

EDUCATION: Scarsdale High School, Scarsdale, NY
BA, Astronomy, Amherst College, 1966
PhD, Astrophysics, Harvard University, 1971

MARITAL STATUS: Married to the former Barbara C. Attridge of London, England

CHILDREN: One

PRESENT POSITION: Astrophysics Research Staff
Massachusetts Institute of Technology
Center for Space Research
Cambridge, MA 02139

PARENTS: Mr. and Mrs. Burton P. Hoffman of Scarsdale, NY

NAME: Shannon W. Lucid, PhD

BIRTH DATE AND PLACE: January 14, 1943 Shanghai, China

CURRENT RESIDENCE: Oklahoma City, OK

EDUCATION: Bethany High School, Bethany, OK
BS, Chemistry, University of Oklahoma, 1963
MS, Biochemistry, University of Oklahoma, 1970
PhD, Biochemistry, University of Oklahoma, 1973

MARITAL STATUS: Married to Michael F. Lucid of Indianapolis, IN

CHILDREN: Three

PRESENT POSITION: Postdoctoral Fellow
Oklahoma Medical Research Foundation
Oklahoma City, OK 73104

PARENTS: Mr. and Mrs. Joseph O. Wells of Bethany, OK

NAME: Ronald "Ron" E. McNair, PhD

BIRTH DATE AND PLACE: October 21, 1950 Lake City, SC

CURRENT RESIDENCE: Marina Del Rey, CA

EDUCATION: Carver High School, Lake City, SC
BS, Physics, North Carolina A & T University, 1971
PhD, Physics, Massachusetts Institute of Technology, 1977

MARITAL STATUS: Married to the former Cheryl B. Moore of Brooklyn, NY

CHILDREN: None

PRESENT POSITION: Member of the Technical Staff, Optical Physics Department
Hughes Research Laboratories
Malibu, CA 90265

PARENTS: - Father: Carl C. McNair of New York, NY
Mother: Pearl M. McNair of Lake City, SC

NAME: Jon A. McBride, LCDR, USN

BIRTH DATE AND PLACE: August 14, 1943 Charleston, WV

CURRENT RESIDENCE: Point Mugu, CA

EDUCATION: Woodrow Wilson High School, Beckley, WV
BS, Aeronautical Engineering, USN Postgraduate School, 1971

MARITAL STATUS: Married to the former Brenda L. Stewart of Bayou La Batre, LA

CHILDREN: Three

PRESENT POSITION: Test Pilot
Air Test and Evaluation Squadron Four
Point Mugu, CA 93042

PARENTS: Mr. and Mrs. William L. McBride of Waynesboro, VA

NAME: Steven R. Nagel, CAPT, USAF

BIRTH DATE AND PLACE: October 27, 1946 Canton, IL

CURRENT RESIDENCE: Edwards, CA

EDUCATION: Canton High School, Canton, IL
BS, Aeronautical/Astronautical Engineering, University of Illinois, 1969

MARITAL STATUS: Married to the former Linda D. Penney of Los Angeles, CA

CHILDREN: None

PRESENT POSITION: Test Pilot
Air Force Flight Test Center
Edwards AFB, CA 93523

PARENTS: Mr. and Mrs. Ivan R. Nagel of Canton, IL

NAME: Richard M. "Mike" Mullane, CAPT, USAF

BIRTH DATE AND PLACE: September 10, 1945 Wichita Falls, TX

CURRENT RESIDENCE: Fort Walton Beach, FL

EDUCATION: St. Pius X High School, Albuquerque, NM
BS, U. S. Military Academy, 1967
MS, Aeronautical Engineering, Air Force Institute of Technology, 1975

MARITAL STATUS: Married to the former Donna M. Sei of Albuquerque, NM

CHILDREN: Three

PRESENT POSITION: Flight Test Weapon Systems Operator
3246th Test Wing
Eglin AFB, FL 32542

PARENTS: Mr. and Mrs. Hugh J. Mullane of Albuquerque, NM

NAME: George D. Nelson, PhD

BIRTH DATE AND PLACE: July 13, 1950 Charles City, IA

CURRENT RESIDENCE: Seattle, WA

EDUCATION: Willmar Senior High School, Willmar, MN
BS, Physics, Harvey Mudd University, 1972
MS, Astronomy, University of Washington, 1974
PhD, Astronomy, University of Washington, 1977

MARITAL STATUS: Married to the former Susan L. Howard of Alhambra, CA

CHILDREN: Two

PRESENT POSITION: Research Associate, Astronomy Department
University of Washington
Seattle, WA 98195

PARENTS: Mr. and Mrs. George V. Nelson of Clinton, IA

NAME: Ellison "E1" S. Onizuka, CAPT, USAF

BIRTH DATE AND PLACE: June 24, 1946 Kealahou, HI

CURRENT RESIDENCE: Edwards AFB, CA

EDUCATION: Konawaena High School, Kealahou, HI
BS, Aerospace Engineering, University of Colorado, 1969
MS, Aerospace Engineering, University of Colorado, 1969

MARITAL STATUS: Married to the former Lorna L. Yoshida of Pahala, HI

CHILDREN: Three

PRESENT POSITION: Chief, Engineering Support Section
Training Resources Branch
USAF Test Pilot School
Edwards AFB, CA 93523

PARENTS - Father: (Deceased)
Mother: Mitsue Onizuka of Holualoa, HI

NAME: Judith "Judy" A. Resnik, PhD

BIRTH DATE AND PLACE: April 5, 1949 Akron, OH

CURRENT RESIDENCE: Redondo Beach, CA

EDUCATION: Firestone High School, Akron, OH
BS, Electrical Engineering, Carnegie-Mellon University, 1970
PhD, Electrical Engineering, University of Maryland, 1977

MARITAL STATUS: Unmarried

CHILDREN: None

PRESENT POSITION: Engineering Staff, Product Development
Xerox Corporation
El Segundo, CA 90245

PARENTS - Father: Marvin Resnik of Akron, OH
Mother: Sarah Polen of Mayfield Heights, OH

NAME: Sally K. Ride

BIRTH DATE AND PLACE: May 26, 1951 Los Angeles, CA

CURRENT RESIDENCE: Stanford, CA

EDUCATION: Westlake High School, Los Angeles, CA
BS, Physics, Stanford University, 1973
BA, English, Stanford University, 1973
MS, Physics, Stanford University, 1975

MARITAL STATUS: Unmarried

CHILDREN: None

PRESENT POSITION: Research Assistant, Physics Department
Stanford University
Stanford, CA 94305

PARENTS: Mr. and Mrs. Dale B. Ride of Encino, CA

NAME: Margaret R. "Rhea" Seddon, MD

BIRTH DATE AND PLACE: November 8, 1947 Murfreesboro, TN

CURRENT RESIDENCE: Memphis, TN

EDUCATION: Central High School, Murfreesboro, TN
BA, Physiology, University of California, Berkeley, 1970
MD, University of Tennessee College of Medicine, 1973

MARITAL STATUS: Unmarried

CHILDREN: None

PRESENT POSITION: Resident Physician, Department of Surgery
City of Memphis Hospital
Memphis, TN 38103

PARENTS - Father: Edward C. Seddon of Murfreesboro, TN
Mother: (Deceased)

NAME: Francis R. "Dick" Scobee, MAJ, USAF

BIRTH DATE AND PLACE: May 19, 1939 Cle Elum, WA

CURRENT RESIDENCE: Edwards AFB, CA

EDUCATION: Auburn High School, Auburn, WA
BS, Aerospace Engineering, University of Arizona, 1965

MARITAL STATUS: Married to the former Virginia J. Kent of Birmingham, AL

CHILDREN: Two

PRESENT POSITION: Test Pilot
Air Force Flight Test Center
Edwards AFB, CA 93523

PARENTS: Mr. and Mrs. Francis W. Scobee of Auburn, WA

NAME: Brewster H. Shaw, Jr., CAPT, USAF

BIRTH DATE AND PLACE: May 16, 1945 Cass City, MI

CURRENT RESIDENCE: Edwards, CA

EDUCATION: Cass City High School, Cass City, MI
BS, Engineering Mechanics, University of Wisconsin, 1968
MS, Engineering Mechanics, University of Wisconsin, 1969

MARITAL STATUS: Married to the former Kathleen A. Mueller of Madison, WI

CHILDREN: Three

PRESENT POSITION: Instructor
U. S. Air Force Test Pilot School
Edwards AFB, CA 93523

PARENTS: Mr. and Mrs. Brewster H. Shaw of Cass City, MI

NAME: Robert "Bob" L. Stewart, MAJ, U. S. ARMY
BIRTH DATE AND PLACE: August 13, 1942 Washington, DC
CURRENT RESIDENCE: Edwards, CA
EDUCATION: Hattiesburg High School, Hattiesburg, MS
BS, Mathematics, University of Southern Mississippi, 1964
MS, Aerospace Engineering, University of Texas, Arlington, 1971
MARITAL STATUS: Married to the former Mary J. Murphy of La Grange, GA
CHILDREN: Two
PRESENT POSITION: Test Pilot
U. S. Army Aviation Engineering Flight Activity
Edwards AFB, CA 93523
PARENTS: Mr. and Mrs. Lee O. Stewart of Waverly Hall, GA

NAME: Kathryn "Kathy" D. Sullivan
BIRTH DATE AND PLACE: October 3, 1951 Paterson, NJ
CURRENT RESIDENCE: Halifax, Nova Scotia, Canada
EDUCATION: Taft High School, Woodland Hills, CA
BS, Earth Sciences, University of California, Santa Cruz, 1973
PhD, Geology, Dalhousie University, Halifax, Nova Scotia, 1978
(Miss Sullivan will receive her PhD. in Geology from the University
of Dalhousie in April 1978. She does not have a master's degree.)
MARITAL STATUS: Unmarried
CHILDREN: None
PRESENT POSITION: Postgraduate Student
National Research Council, Dalhousie University
Halifax, Nova Scotia, Canada
PARENTS: Mr. and Mrs. Donald P. Sullivan of Cupertino, CA

NAME: Norman "Norm" E. Thagard, MD

BIRTH DATE AND PLACE: July 3, 1943 Marianna, FL

CURRENT RESIDENCE: James Island, SC

EDUCATION: Paxon High School, Jacksonville, FL
BS, Engineering Science, Florida State University, 1965
MS, Engineering Science, Florida State University, 1966
MD, University of Texas Southwestern Medical School, 1977

MARITAL STATUS: Married to the former Rex K. Johnson of Atlanta, GA

CHILDREN: Two

PRESENT POSITION: Intern, Department of Internal Medicine
Medical University of South Carolina
Charleston, SC

PARENTS - Father: James E. Thagard of Palm Desert, CA
Mother: Mary F. Nicholson of St. Petersburg, FL

NAME: James "Jim" D. van Hoften, PhD

BIRTH DATE AND PLACE: June 11, 1944 Fresno, CA

CURRENT RESIDENCE: Houston, TX

EDUCATION: Mills High School, Millbrae, CA
BS, Civil Engineering, University of California, Berkeley, 1966
MS, Hydraulic Engineering, Colorado State University, 1968
PhD, Fluid Mechanics, Colorado State University, 1976

MARITAL STATUS: Married to the former Vallarie Davis of Pasadena, CA

CHILDREN: Two

PRESENT POSITION: Assistant Professor of Civil Engineering
University of Houston
Houston, TX 77004

PARENTS: Mr. and Mrs. Adriaan van Hoften of Redwood City, CA

NAME: Loren J. Shriver, CAPT, USAF

BIRTH DATE AND PLACE: September 23, 1944 Jefferson, IA

CURRENT RESIDENCE: Edwards AFB, CA

EDUCATION: Paton Consolidated High School, Paton, IA
BS, USAF Academy, 1967
MS, Astronautics, Purdue University, 1968

MARITAL STATUS: Married to the former Susan D. Hane of Jefferson, IA

CHILDREN: Four

PRESENT POSITION: Test Pilot
Air Force Flight Test Center
Edwards AFB, CA 93523

PARENTS: Mr. and Mrs. Darrell R. Shriver of Paton, IA

NAME: David "Dave" M. Walker, LCDR, USN

BIRTH DATE AND PLACE: May 20, 1944 Columbus, GA

CURRENT RESIDENCE: Virginia Beach, VA

EDUCATION: Eustis High School, Eustis, FL
BS, USN Academy, 1966

MARITAL STATUS: Married to the former Patricia A. Shea

CHILDREN: Two

PRESENT POSITION: Naval Aviator
VF-142 (USS America)
FPO New York 09501

PARENTS - Father: (Deceased)
Mother: Anne W. Rundle of Boston, MA

NAME: Donald "Don" E. Williams, LCDR, USN

BIRTH DATE AND PLACE: February 13, 1942 Lafayette, IN

CURRENT RESIDENCE: Lemoore, CA

EDUCATION: Otterbein High School, Otterbein, IN
BS, Mechanical Engineering, Purdue University, 1964

MARITAL STATUS: Married to the former Linda J. Grubaugh of Sturgis, MI

CHILDREN: Two

PRESENT POSITION: Naval Aviator
Readiness Training Squadron
NAS Lemoore, CA 93245

PARENTS: Mr. and Mrs. Robert E. Williams of Lafayette, IN

SELECTION BOARD MEMBERS

Chairman

George W. S. Abbey - Director of Flight Operations, JSC

Recorder

J. Honeycutt - Assistant to Director, Flight Operations, JSC

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John W. Young - Chief, Astronaut Office, JSC

Vance Brand - Astronaut

Martin L. Raines - Director of Safety, Reliability, and Quality Assurance

Joseph D. Atkinson - Chief, Equal Opportunity Programs Officer, JSC

Jack R. Lister - Personnel Officer, JSC

Donald K. Slayton - Manager for Approach and Landing Test, JSC
(ALT duties precluded major participation in Board activities)

Mission Specialist Panel

Dr. Joseph P. Kerwin, M.D. - Chief Mission Specialist Group,
Astronaut Office, JSC

Dr. Robert A. Parker - Astronaut, Mission Specialist Group

Dr. Edward G. Gibson - Astronaut, Mission Specialist Group

Dr. Carolyn L. Huntoon - Chief, Metabolism and Biochemistry
Branch, Space and Life Sciences Directorate, JSC

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Jack R. Lister - Personnel Officer, JSC

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Laboratory, GSFC

Robert O. Piland - Assistant Director for Program Development,
Engineering and Development Directorate, JSC

PILOTS

| QUALIFIED APPLICANTS | | INTERVIEWED | MEDICALLY QUALIFIED | QUALIFIED/ INTERESTED | SELECTED |
|--|--|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 147 MILITARY (4 MINORITY) | | 76 MILITARY (3 MINORITY) | 71 MILITARY (2 MINORITY) | 70 MILITARY (2 MINORITY) | 14 MILITARY (1 MINORITY) |
| 512 CIVILIAN (6 MINORITY) (8 FEMALE) | | 4 CIVILIAN | 4 CIVILIAN | 4 CIVILIAN | 1 CIVILIAN |

MISSION SPECIALISTS

| QUALIFIED APPLICANTS | | INTERVIEWED | MEDICALLY QUALIFIED | QUALIFIED/ INTERESTED | SELECTED |
|--|--|--|--|--|---|
| 161 MILITARY (6 MINORITY) (3 FEMALE) | | 45 MILITARY (4 MINORITY) (2 FEMALE) | 34 MILITARY (3 MINORITY) (2 FEMALE) | 34 MILITARY (3 MINORITY) (2 FEMALE) | 7 MILITARY (2 MINORITY) |
| 5519 CIVILIAN (332 MINORITY) (1248 FEMALE) | | 83 CIVILIAN (8 MINORITY) (19 FEMALE) | 43 CIVILIAN (4 MINORITY) (12 FEMALE) | 41 CIVILIAN (4 MINORITY) (12 FEMALE) | 13 CIVILIAN (1 MINORITY) (6 FEMALE) |

DOD ASTRONAUT CANDIDATES

| | <u>Pilot</u> | <u>Mission Specialist</u> | <u>Total</u> |
|-----------|--------------|---------------------------|--------------|
| Air Force | 6 | 4 | 10 |
| Navy | 8 | 1 | 9 |
| Marine | 0 | 1 | 1 |
| Army | 0 | 1 | 1 |
| | | TOTAL | <u>21</u> |

ASTRONAUTS

| | |
|----------------------|-----------|
| TOTAL SELECTED | 73 |
| Left Program | 45 |
| Leave of Absence | 1 |
| Active | 27 |
| Pilot Astronauts | 17 |
| Scientist Astronauts | <u>10</u> |
| TOTAL | 27 |

7 GROUPS OF ASTRONAUTS WERE SELECTED:

| | | |
|-----------|-------------------------|----------------|
| Group I | 7 Mercury Astronauts | April 1959 |
| Group II | 9 Test Pilots | September 1962 |
| Group III | 14 Pilot Astronauts | October 1963 |
| Group IV | 6 Scientist Astronauts | June 1965 |
| Group V | 19 Pilot Astronauts | April 1966 |
| Group VI | 11 Scientist Astronauts | August 1967 |
| Group VII | 7 MOL Pilots | August 1969 |

| |
|------------------------------|
| 73 Total Selected |
| 35 Selected January 16, 1978 |

108 Total Selected

ACTIVE ASTRONAUTS

MILITARY

Kerwin (S) (MD) (Navy)
Engle (Air Force)
Lousma (Marine)
Mattingly (Navy)
McCandless (Navy)
Robko (Air Force)
Crippen (Navy)
Overmyer (Marine)
Peterson (Air Force)
Truly (Navy)
Fullerton (Air Force)

(S) Scientist
(MD) Doctor

| | |
|----------|---------------------|
| Civilian | 16 |
| Military | <u>11</u> |
| TOTAL | 27 (includes Allen) |

| | |
|-----------|-----------|
| Scientist | 10 |
| Pilot | <u>17</u> |
| TOTAL | 27 |

CIVILIAN

Slayton
Bean
Garriott (S)
Brand
Hartsfield
Haise
Gibson (S)
Young
Lind (S)
Henize (S)
Lenoir (S)
Musgrave (S) (MD)
Parker (S)
Thornton (S) (MD)
Allen (S)
Weitz

(Pogue - on extended
leave, not included
in total)

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

February 1, 1978
2:00 p.m. CST

RELEASE NO: 78-04

SINGER COMPANY TO BUILD SPACELAB SIMULATOR

The NASA Johnson Space Center, Houston, has signed a supplemental agreement to its contract with the Link Division of the Singer Company to cover design, manufacture, installation and testing of a Spacelab Simulator.

The new simulator will be tied into the Space Shuttle Mission Simulator at JSC for training of flight crews and flight controllers in Shuttle spacecraft and Spacelab systems operations. The supplement to the cost-plus-award-fee contract is valued at \$5 million.

Spacelab is a scientific space station developed and built by a consortium of ten nations in the European Space Agency (ESA) and which will be carried into Earth orbit in the Shuttle Orbiter's 15 x 65-foot cargo bay.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-05

January 20, 1978
2 p.m. CST

NASA ADDS SPARE PARTS TO ORBITER CONTRACT

The NASA Johnson Space Center, Houston, has signed two amendments to the Space Shuttle Orbiter contract with Rockwell International Space Division covering spare parts and test articles with a combined value of \$12,825,947.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release

RELEASE NO: 78-06

February 3, 1978

ALSO RELEASED AT NASA HEADQUARTERS

DATA ON THE ORBIT OF THE SKYLAB WORKSHOP

The latest data on the orbit of the Skylab Workshop indicates that it will have descended to 150 nautical miles (173 statute miles, 278 kilometers) altitude and could begin reentry into the Earth's atmosphere as early as late summer of 1979 and as late as the second quarter of 1980.

NASA bases its prediction on data provided by the North American Air Defense Command's (NORAD) satellite tracking organization, the Smithsonian Astrophysical Observatory, and the Swiss Federal Observatory.

NASA is working on plans that may extend the Skylab reentry time, such as reactivation of the Skylab Workshop's thruster attitude control system (TACS) to cause it to go into a very slow tumble which would decrease the atmospheric drag and perhaps add several months to the orbital lifetime. NASA will attempt this in spring of 1978.

In addition, the launch of a Teleoperator Retrieval System (TRS) on an early Space Shuttle mission, about October 1979 is being

(more)

examined. The TRS would be carried into orbit by the Shuttle, removed from the Shuttle payload bay and flown by remote control to dock with Skylab. Once docked, a propulsion system on TRS could be operated either to raise the Skylab orbit or to cause it to reenter the atmosphere in a controlled fashion to a remote ocean area of the Earth below. (TRS is part of NASA's Fiscal 1979 Budget proposal now before the Congress.)

Skylab is the largest payload in Earth orbit. It weighs 85 tons and is about 96 feet long. The main portion is cylindrical, 22 feet in diameter.

Skylab on descending into the Earth's atmosphere is expected to break up and burn during descent. Some debris is expected to survive the reentry and reach the Earth's surface. It is probable that any surviving debris would land in an ocean since 80 per cent of the Earth beneath the Skylab orbit is water. In orbit, Skylab is passing above the area of Earth between 50 degrees north and 50 degrees south latitude.

Skylab was launched in May 1973 and was manned during three missions by three different astronaut crews. The last crew departed Skylab February 8, 1974 at an altitude of 237 nautical miles (273 sm, 440 km). Skylab presently is 220 nautical miles (253 sm, 408 km) above Earth.

At the time the final crew departed NASA estimated that the orbiting workshop would remain in space until 1983. However, since

(more)

that time the orbit has decreased at a higher-than-anticipated rate and NASA has been adjusting its predictions from time to time. Contributing to the more rapid rate-of-descent is an increase in atmospheric drag which in turn is caused by sunspot activity.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-07

February 6, 1978
2:00 p.m. CST

NASA SIGNS LOCKHEED FOR WHITE SANDS SUPPORT

The NASA Johnson Space Center, Houston, has awarded a \$16 million contract to Lockheed Electronics Company, Inc., for test stand operation, laboratory support services, and maintenance and operations services at JSC White Sands Test Facility near Las Cruces, New Mexico.

The contract covers a 12-month period beginning February 1, 1978.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release:

RELEASE NO: 78-08

February 10, 1978

JOHNSON SPACE CENTER TO PROCESS PRISTINE METEORITE FRAGMENTS

The Johnson Space Center, Houston, has begun a new program for receiving and processing rare and pristine meteorite samples. Until quite recently a special program for meteorites has not been needed because the meteorite fragments found had been contaminated by reactions with the soil where they fell, by the effects of weather, and by the often unsterile handling conditions once they had been recovered.

The new meteorite facility will handle a new, near-pristine, meteorite collection found this winter near McMurdo Station, in the Antarctic.

The first meteorite samples arrived at the space center on Saturday, February 11, and were two 200-300 gram (baseball-sized) fragments believed by the National Science Foundation to be rare carbonaceous chondrites. These two samples could contain evidence of primordial matter from our solar system.

- more -

The samples were found on the Antarctic ice shelf by Dr. William Cassidy, a University of Pittsburgh geologist working under a grant from the NSF. Cassidy hypothesized that very large finds of meteorites might be discovered in areas of the Antarctic where ancient, "blue ice," was raised to the surface. Cassidy suggested meteorites which fell on Antarctica in centuries past could appear on the surface along with the ice.

The exact manner by which the ice and meteorites move to the surface from beneath hundreds of feet of snowpack is not well understood; however, Cassidy found 310 meteorite fragments in a two-month period this past December and January. Cassidy feels the fragments represent between 20 and 50 different meteorites. This is the most concentrated find ever collected. There are at present fragments from an estimated 2,000 meteorites which have been found. Because of the exceptional preserving conditions in the extreme cold and dry environment of Antarctica, the 310 samples which Cassidy found are considered the most uncontaminated, near-pristine meteorite samples ever collected.

To insure that the samples would be collected properly, the NSF and NASA's Lunar Curatorial Facility in Houston, equipped Cassidy with special sterile equipment used to handle the lunar sample collection.

The meteorite processing facility at the space center will receive the samples, and, using glove-boxes first used to handle material from the moon, will document the samples and make initial characterization studies of the fragments, which will be weighed and photographed.

Following the initial documentation, the samples might also be freeze-dried to remove any water-ice trapped in the sample. A mold might also be taken of the fragments. The samples will then be stored in dry nitrogen gas in special cabinets.

A special committee comprised of members of the NSF, the Smithsonian Museum of Natural History, NASA, and Dr. Cassidy's team is expected to produce a detailed plan for a more systematic examination of the samples.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

RELEASE NO: 78-09

For Release:

February 16, 1978
2 p.m. CST

NASA SIGNS ADD-ON TO FORD CONTRACT

The NASA Johnson Space Center, Houston, has signed a contract modification with Ford Aerospace and Communications Corporation covering hardware and software systems engineering, and maintenance and operations of the Mission Control Center and other ground-based data systems at JSC.

Valued at \$1,018,576, the modification brings the total value of the cost-plus-award-fee Ford Contract to \$52,297,741.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

RELEASE NO: 78-10

For Release:

February 22, 1978
2 p.m. CST

NORTHROP SIGNED TO OPERATE JSC LABS

The NASA Johnson Space Center, Houston, has signed a cost-plus-award-fee contract with Northrop Services, Inc. of Houston covering maintenance and operation of life sciences and engineering laboratories, and the Lunar Curatorial Laboratory at JSC.

The \$23,358,766 contract runs from February 1, 1978 through May 31, 1980.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release:

RELEASE NO: 78-11

February 23, 1978

"Enterprise" at Ellington

Enterprise, the nation's first Space Shuttle orbiter, will be on display at Ellington Air Force Base for three days, March 10-12, 1978.

Enterprise is enroute to the NASA Marshall Space Flight Center, Huntsville, Alabama, where it will undergo a series of ground vibration tests. The 75-ton orbiter will be flown piggy-back atop its carrier aircraft, a modified 747 jetliner. The Ellington Air Force Base stop is a scheduled re-fueling stop for the 747 enroute from the NASA Dryden Flight Research Center, Edwards, California to the NASA facility in Alabama.

The public is invited to view the landing at 2 p.m., March 10. The 747 Orbiter combination will be on public display from 2 p.m. through 5 p.m. on March 10 and again from 9 a.m. to 5 p.m. on March 11 and March 12.

Enterprise is the first of several Shuttle orbiters NASA plans to build for the Shuttle Transportation System which will begin with

- more -

initial test flights now scheduled for the spring of 1979. Enterprise was used in the successful approach and landing test project during which time it was released from the 747 carrier aircraft for a piloted landing at Edwards Air Force Base. These tests were completed in October.

The Shuttle orbiter will be used at least 100 times during the Shuttle program. It will be boosted into low earth orbit by means of its three main engines, coupled with the two solid rocket boosters which are strapped to the side of the external fuel tank. The boosters, like the Orbiter, will be reused.

When the vibration tests are concluded at the Marshall Space Flight Center, Enterprise will be returned to California where it is scheduled for major modifications. The first space flights of Shuttle will be with a second orbiter now being assembled at the Rockwell International Space Division plant at Palmdale, California.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release:

RELEASE NO: 78-12

February 23, 1978

SLAYTON APPOINTMENT

Astronaut Donald K. Slayton has been appointed manager of the Orbital Flight Test program for Space Shuttle at the NASA Johnson Space Center.

Slayton, one of the original seven Mercury astronauts and a member of the U.S. crew of the Apollo Soyuz Test Project in the summer of 1975 will be responsible for all mission-unique activities associated with the six orbital flight tests of the Space Shuttle. He reports directly to Robert F. Thompson, Space Shuttle Program Manager at JSC.

In his new position Slayton will represent the Program Manager across the total program to insure timely and appropriate resolution of all OFT mission unique issues. OFT flights are scheduled to begin in the spring of 1979.

- more -

Slayton was selected in April 1959 as one of the original seven Mercury astronauts. He later served as Director of Flight Crew Operations for several years and in July 1975 flew as the docking module pilot for the joint Apollo Soyuz Test project with the Soviet Union. Most recently he managed the highly successful Approach and Landing Test Project in which the Shuttle orbiter was released from atop a 747 carrier aircraft to piloted landings at the Edwards Air Force Base, Edwards, California.

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton E. Reim

For Release
Immediate

RELEASE NO: 78-13

SKYLAB ACTIVATION

NASA will attempt to contact the orbiting Skylab space station beginning Monday from a ground station in Bermuda.

NASA engineers will attempt to turn on the Skylab command and telemetry systems and place some of the onboard storage batteries in a circuit so that they will receive "trickle" charge from the Skylab's solar cell panels.

Objective of the exercise is to determine what condition the Skylab and its subsystems are in.

The attempt will be conducted by NASA engineers and flight controllers from the Marshall Space Flight Center, Huntsville, Ala., and Johnson Space Center, Houston, Texas in addition to the NASA/Goddard Space Flight Center tracking crews.

NASA plans subsequent contacts after mid-April from the Mission Control Center in Houston, through the Bermuda and Madrid ground stations. These contacts would be designed to activate the Skylab

-more-

attitude reference and control system in order to determine the space station's attitude and possibly modifying it.

One of the possibilities is change the orientation of Skylab in a manner which will reduce atmospheric drag and possibly add some months to its orbital lifetime.

Current NASA predictions indicate that the Skylab will enter the atmosphere sometime between early summer 1979 and the second quarter of 1980. NASA is hopeful it will be able to rendezvous with Skylab on a Space Shuttle test flight in October 1979, to remotely maneuver a propulsion stage to dock with Skylab and use this stage to either propel Skylab to a higher orbit for future use or to cause it to reenter the atmosphere in a controlled manner to insure that debris would land in a remote area of an ocean.

The first attempt to communicate with Skylab will be when it is over Bermuda and in the sunlight.

Flight controllers plan to turn on the Skylab Airlock Module-Orbital Workshop telemetry link, evaluate it and turn it off on the first pass.

On a subsequent pass they will repeat the above procedure and also turn on the Apollo Telescope Mount telemetry link and evaluate it, then turn it off.

When the controllers have determined that the communications systems are in order, the next step will be to activate batteries in the Airlock Module and Orbital Workshop and put them on trickle charge from electrical power supplied by the solar panels. The status of the battery charging will be evaluated on later passes of Skylab over Bermuda.

Three flight controllers from Houston will be at the Bermuda site. Bill Peters, the team leader, will be assisted by Harry Black, instrumentation and communications officer (INCO), and Steve McLendon, electrical, general instrumentation and life support officer (EGIL). The reactivation procedure is expected to be completed in one to two weeks.

Skylab was launched May 14, 1973 from Florida and was visited by three astronaut crews during 1973-74. The final crew departed February 8, 1974.

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March 1, 1978

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release:

RELEASE NO: 78-14

March 8, 1978

ALSO RELEASED AT NASA HEADQUARTERS

LUNAR AND PLANETARY DISCOVERIES TO BE PRESENTED AT HOUSTON SESSIONS

The Moon and other worlds are the focus of the ninth annual Lunar and Planetary Science Conference, a weeklong meeting to be held at NASA's Johnson Space Center, Houston, beginning Monday, March 13.

The conference, which is expected to attract more than 500 scientists from the United States and abroad, is being hosted jointly by JSC and the Lunar and Planetary Institute of Houston.

The Conference will include 471 papers on such varied subjects as the formation of the solar system, new discoveries in moon rocks, the histories of planets, meteorites that contain material from ancient stars, and comparative studies of Mars, Venus, and the Earth. A summary session, presented on Friday morning, March 17, will describe the major new discoveries in these and other areas of research.

- more -

For the third consecutive year, the Soviet Union is sending a delegation of space scientists to the conference to present results from their own lunar missions, their Venus planetary probes and some recent meteorite crater examination.

The conferences, begun in 1970, were originally used to share the knowledge gained from the recently obtained lunar samples. The first six Lunar Science Conferences were almost entirely involved with lunar studies. More recently, lunar research has become increasingly important for helping to understand the other planets of the solar system, and the last two conferences, in 1976 and 1977, included much more information about comparative studies of such other worlds as Mercury, Venus, Mars, and the asteroids. The name of this year's conference has been changed to "Lunar and Planetary" to reflect the continuing trend for combined studies in planetary exploration.

This year's conference is separated into seven main topics, with sessions occurring simultaneously throughout the week. The sessions are entitled: Constraints on Structure, Composition and History of Planetary Interiors; Characteristics and Movement of Material on Lunar, Planetary and Asteroidal Surfaces; Characterization and Evolution of Volcanic Landforms; Characterization and Evolution of Planetary Crusts; Nature and Effects of Impact Processes; Extraterrestrial Materials; Solar, Interplanetary, Interstellar Probes; and Earliest History of the Solar System.

Several special sessions have been scheduled to cover especially exciting or interdisciplinary fields of research. Two such sessions will be held Tuesday, March 14, at 1:30 p.m. One, "Industrial Development of Near-Earth Space," will present 10 speakers who will discuss topics relating to future space habitation: the availability of resources in space near the Earth, and the environmental impact of performing mining operations on the Moon or on captured asteroids.

The second session, called "Planetary Interiors: What Do We Really Know?" discusses the parts of planets that we can never observe directly. The session covers such topics as density, gravity fields, magnetic fields, continental motions, chemical compositions and the histories of the moons of different planets.

Chairman for the space industrialization session is Dr. David Criswell, staff scientist at the LPI. Chairman for the planetary interiors session is Dr. Gary Latham, a geophysicist from the University of Texas Marine Science Institute.

Another special session Tuesday will discuss the origin of the solar system. Entitled "In the Beginning...." The meeting will be held in the main Johnson Center auditorium and will be open to the public. It will feature five science teams presenting their differing views about the earliest events and the subsequent development of the solar system.

While Tuesday's sessions explore the past and the present of the solar system, a special meeting on Wednesday will discuss the future. Entitled "Looking Forward," this session will include a series of papers about future planetary exploration, covering new and promising techniques such as radar mapping of Venus and discussing future missions that could be sent to Mars.

Mars and Mercury will be discussed together at a meeting devoted exclusively to new results on these two planets.

Special sessions are also being organized for subjects that are especially exciting for the scientific community. Mars and Mercury will be discussed together at a meeting devoted exclusively to new results on these two planets. A special session on meteorites will present new results from a new "gold rush" in space sciences: the discovery of dozens of well-preserved meteorites on the frozen Antarctic ice cap this past winter. Prof. William Cassidy, the University of Pittsburgh geologist who led a U.S.-Japanese team which made the discovery believes that two of the meteorites may be preserved material from a very early period of solar system history.

These two meteorites, along with about 300 other fragments, will be examined in detail at the Johnson Space Center later this spring and summer. This collection may prove to be an important source of new information about the origin and history of the solar system. Two of the specimens are believed to be carbonaceous chondrites, a rare carbon-bearing type of meteorite that may give us a new understanding about the origin of life.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

RELEASE NO: 78-15

For Release:
Immediate
March 16, 1978

NASA NAMES ASTRONAUT CREWS FOR EARLY SHUTTLE FLIGHTS

Four two-man crews have been selected to begin training for early orbital flights of the Space Shuttle. They are:

John W. Young, 47, commander; Robert L. Crippen, 40, pilot

Joe H. Engle, 45, commander; Richard H. Truly, 40, pilot

Fred W. Haise, 45, commander; Jack R. Lousma, 42, pilot

Vance D. Brand, 46, commander; Charles G. Fullerton, 41, pilot

Young and Crippen will be the prime flight crew for the first orbital flight test (OFT-1) scheduled for launch from NASA's Kennedy Space Center in the spring of 1979.

Engle and Truly will be their backup crew.

Flight assignments for the others named today will be made at a later date.

NASA plans a series of six orbital flight tests, each of increasing complexity, to check out the nation's first reusable spacecraft. On the first four flights, the 75-ton orbiter will

return from space to an unpowered landing on a dry lakebed at Edwards Air Force Base, California. Thereafter, the spacecraft will return to a specially constructed runway at its Cape Canaveral launch site.

The space agency is currently considering a mission to boost Skylab into a higher orbit during one of the OFT flights. If the decision is made to implement that plan, prime and backup flight crews will be selected from those named today.

Young is Chief of the Astronaut Office and a veteran of four space flights. He was pilot of the first manned Gemini flight, Gemini 3, in 1965; command pilot of Gemini 10 in 1966; command module pilot of Apollo 10 in 1969; and commander of Apollo 16, a lunar landing mission in 1972. He has been a member of four backup crews. Young, a retired Navy captain, has been an astronaut since 1962.

Crippen will be making his first space flight. A Navy commander, he has been a NASA astronaut since 1969 when he was transferred from the cancelled USAF Manned Orbiting Laboratory program. Crippen was a crew member on the Skylab Medical Experiments Altitude Tests (SMEAT), a 56-day simulation of a Skylab mission. He was a member of astronaut support crews for Skylab and Apollo Soyuz Test Project missions.

Engle, an Air Force colonel, commanded one of the two crews which flew the Space Shuttle approach and landing tests in 1977. Prior to his selection as a NASA astronaut in 1966, he was a test pilot in the X-15 research program and had qualified for astronaut wings in X-15 rocket plane flights exceeding 50 miles altitude. Engle was backup lunar module pilot for the Apollo 14 mission.

Truly flew with Engle in the Shuttle approach and landing tests. He is a Navy commander and was a MOL astronaut prior to transferring to NASA in 1969. Truly was on astronaut support crews for Skylab and Apollo Soyuz missions.

Haise, a civilian, was lunar module pilot for Apollo 13 in 1970 and commanded one of the two flight crews for the Shuttle approach and landing tests last year. He was backup lunar module pilot for the Apollo 8 and 11 missions and backup spacecraft commander for Apollo 16. He became an astronaut in 1966 after several years as a NASA research pilot.

Lousma, a Marine Corps lieutenant colonel, was pilot for Skylab 3 in 1973. He was backup docking module pilot for the Apollo Soyuz mission and served on astronaut support crews for the Apollo 9, 10, and 13 missions. Lousma has been an astronaut since 1966.

Brand was command module pilot for the Apollo Soyuz mission in 1975. An astronaut since 1966, he was a support crewman for

Apollo 8 and 13, backup command module pilot for Apollo 15 and backup commander for the Skylab 3 and 4 missions. Brand is a civilian.

Fullerton flew Shuttle approach and landing tests with Haise. An Air Force lieutenant colonel, he was assigned to the MOL program before becoming a NASA astronaut in 1969. Fullerton served on astronaut support crews for the Apollo 14 and 17 missions.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milt Reim

For Release

RELEASE NO: 78-16

March 17, 1978

SHUTTLE FLIGHT DIRECTORS NAMED BY NASA

Flight directors for the first manned Shuttle orbital flight have been named by the National Aeronautics and Space Administration at the Johnson Space Center in Houston.

The new flight directors are Neil B. Hutchinson, Charles R. Lewis, and Donald R. Puddy, all of the JSC Flight Operations Directorate. They will be responsible for planning and directing the activities of the Mission Control Center during Shuttle real-time mission operations.

Their responsibilities will include the integration of inputs from all elements of NASA, contractor and the scientific communities.

Hutchinson will be responsible for planning and directing all activities associated with the Shuttle ascent phase, Lewis the on-orbit phase and Puddy the entry phase of the Orbiter.

Hutchinson, Lewis and Puddy were flight directors during Apollo and Skylab missions.

The first flight of the Shuttle is scheduled for early in 1979 and will be launched from the Kennedy Space Center in Florida with control of the flight conducted from Houston.

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NASA-JSC

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 77-17

March 30, 1978
2 p.m. CST

IBM GETS CONTRACT ADD-ON FOR HOUSTON DATA WORK

The NASA Johnson Space Center, Houston, has signed a \$10,355,000 supplemental agreement to its contract with IBM Corporation's Houston office covering design, development and implementation of ground-based computing and data processing system software at the Center. The estimated total cost of the supplement is \$50,137,200.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-18

May 10, 1978

IBM CONTRACT EXTENDED

The NASA Johnson Space Center, Houston, has extended its contract with IBM Corporation for equipment, materials, facilities and people for software for the Center's ground-based computer and data processing systems.

The \$50,137,200 supplement extends the contract through March 31, 1980 and brings the contract total to \$82,562,364.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-19

May 17, 1978

SPACE BIOSCIENCE CONFERENCE HELD BY UT, NASA-JSC

Ways to exploit the advantages of space flight in biomedical research will be explored in a two-day conference sponsored by the University of Texas Health Science Center in Houston and by the NASA Johnson Space Center.

The first session of "Space: A Challenge for the Life Sciences," will begin at noon May 23 in the Cabaret Room of the Shamrock Hilton Hotel, and the May 24 morning session will be at Johnson Space Center's Gilruth Recreation Facility.

Speakers for the May 23 session are UT Health Science Center President Truman G. Blocker, MD; JSC Director Christopher C. Kraft, Jr.; NASA Director for Life Sciences David L. Winter, MD; JSC Director of Space and Life Sciences Richard S. Johnston, and University of California Oncology Professor Steven Armentrout, MD.

The Tuesday session ends with a panel discussion on space flight applications.

A continental breakfast starts the Wednesday session at JSC's Gilruth Center, followed by mini-seminars in specific disciplines of space biosciences.

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NASA-JSC

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-20

Upon Receipt

ALSO RELEASED AT NASA HEADQUARTERS

NASA PLANS SKYLAB ATTITUDE CHANGE PROCEDURES

As a result of successful contact with Skylab during interrogations from tracking stations in March and April, NASA will attempt to uplink from Mission Control at Johnson Space Center a series of attitude change procedures with Skylab beginning early next month.

The activities, beginning June 1, involve putting a new computer program into the onboard computer, using the attitude control system to maneuver Skylab into the desired position and operating the control moment gyros to keep the spacecraft in that mode. These procedures should be completed by mid-June.

- more -

These procedures are designed to establish control of the spacecraft and thereby extend its orbital lifetime by perhaps as much as 6 to 12 months. If these attitude change maneuvers are successful and the gyros continue to operate, Skylab's reentry into the Earth's atmosphere could be delayed until sometime between late 1979 and mid-1980. The maneuvers will decrease atmospheric drag on the spacecraft by orienting it to be aligned with the flight path.

If the desired attitude is achieved, Skylab then will be monitored on a daily basis. Hopefully, no additional maneuvers or adjustments will be necessary. A successful attitude change maneuver could provide sufficient time to carry out a Skylab reboost or controlled deorbit mission on an early Space Shuttle flight.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-21

May 19, 1978
2 p.m. CDT

NASA ADJUSTS ROCKWELL ORBITER CONTRACT COSTS

The NASA Johnson Space Center has signed a supplemental agreement to the Rockwell International Space Division contract for the Space Shuttle Orbiter covering anticipated cost adjustments and increases. The \$125 million adjustment brings the total Rockwell contract value to approximately \$3.4 billion.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-22

May 30, 1978
2 p.m. CDT

JSC NEGOTIATES WITH A-V CORPORATION FOR AUDIOVISUAL PUBLIC INFORMATION SUPPORT SERVICES

The National Aeronautics and Space Administration has selected A-V Service Corporation to enter into formal negotiations for award of a contract for Audiovisual Public Information Support Services.

The work to be performed will fall into two main areas: (1) General audiovisual support; and (2) motion-picture production. The contractor shall perform audiovisual support services that include the following: (1) Operate and maintain a public information still photographic library; (2) maintain a motion-picture distribution library; (3) provide news and information media services; (4) provide design and documentation support to the JSC Public Affairs Office; (5) provide projection services; (6) maintain an audiovisual equipment loan pool; and (7) produce motion pictures.

- more -

A-V Service Corporation's proposed contract amount is approximately \$600,000 for the initial one year period beginning July 1, 1978. It is contemplated that additional periods of time, not to exceed 24 months in 12-month increments, will be negotiated.

The other proposers were McGregor & Werner, Incorporated, Washington, D.C. and National Film Company, Inc., Houston, Texas.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 78-23

May 31, 1978

FOURTH ANNUAL AEROSPACE WORKSHOP SET FOR JUNE 5

The fourth annual aerospace workshop for educators will be held at the Johnson Space Center June 5 through 16, 1978. Sponsored jointly by JSC, the University of Houston and the Civil Air Patrol, the workshop will include non-technical aviation and space lectures and demonstrations and field trips aimed at elementary, secondary and college-level administrators, counselors and teachers.

Topics include aerospace education, hot air balloons -- including a launch, NASA aircraft operations, the Civil Air Patrol, tracking and communications, physiological training for astronauts, the Space Shuttle, space crew systems, Earth resources, astronaut selection, the lunar sample program, the Landsat program, solar power satellites, and NASA future programs.

- more -

The fee for the workshop is \$60 and includes materials, books and field-trip transportation. Three semester hours undergraduate or graduate credit will be offered by the University of Houston to persons attending the workshop.

Workshop applications should be made to Robert M. Jones, University of Houston, Office of Curriculum and Instruction, Houston, Texas 77058, ac 713 488-9290; or Dr. Jacob Blankenship, University of Houston, Office of Curriculum and Instruction, Houston, Texas 77004, ac 713 749-3578.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center

Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release
Upon Receipt

Release no: 78-24

SPACE CENTER TO BEGIN PROCESSING OF RARE METEORITES

Two meteorite samples retrieved under clean conditions near Allan Hills in the TransAntarctic Mountains and believed to be rare carbon-bearing types will undergo initial examination at the Johnson Space Center on Thursday, June 8, 1978. The two special meteorites were collected along with over 300 other, less rare types, on an expedition sponsored by the National Science Foundation and led by Dr. William Cassidy, a University of Pittsburgh geologist, this past December and January.

If, as expected, the two carbon-bearing types are verified as carbonaceous chondrites, there is the possibility the two fragments may contain clues of the very earliest epoch of our solar system and may shed some light on the evolution of organic compounds. This knowledge will help in understanding the evolution of life here on Earth.

Meteorites - 2

Because of the environmental conditions in the Antarctic, such as extremely low humidity and preserving cold air, the meteorites which Cassidy's team found are thought to represent the cleanest and least contaminated meteorites yet collected.

Cassidy had proposed the expedition to the NSF based on studies he made and previous discoveries by the Japanese in the Yamato Mountains that meteorites might be found in certain sections of the TransAntarctic Range where the ice shelf pushed against barrier mountains. Meteorites which had fallen on the ice shelf in millenia past would be at some depth in the ice shelf. As the shelf moved slowly towards the sea any obstruction in its path, such as a mountain or a sub-ice ridge, would obstruct the flow and force an upwelling of clear ice. Strong winds, prevalent on the ice shelf, would blow surface snow cover away and leave meteorites exposed.

Cassidy's group found over 300 such meteorite fragments in a six-mile area during the two month search to test the hypothesis. The 300 or so fragments represent perhaps 30 different meteorite falls.

Because of early expectations of the find, the NSF and the National Aeronautics and Space Administration, provided Cassidy's team with special lunar-type handling equipment and lunar-rock storage boxes so any meteorite fragments which were found could be

Meteorites - 3

kept uncontaminated until a facility and procedures were established for their examination under clean-room conditions.

The special meteorite facility has been installed in the Lunar and Planetary Sciences laboratory at the Johnson Space Center and procedures for the initial examination and subsequent distribution of the samples have now been approved by a committee comprised of representatives of Cassidy's team, the National Science Foundation, NASA, the Smithsonian Institution, and various universities.

The processing, to begin on June 8, will consist of initial characterization of the samples. This will involve the precise weighing and photographic documentation of the samples along with a written description of each sample. The samples were found in a frozen condition, were kept frozen during their transport from the Antarctic to Houston, and will be kept frozen during the initial processing. Subsequent studies will be performed by investigators at various laboratories throughout the country.

Cassidy and a team of meteorite searchers are expected to return to the Antarctic again this coming summer season there to continue their meteorite search.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release:

RELEASE NO: 78-25

Upon Receipt

ALSO RELEASED AT NASA HEADQUARTERS

NOTE TO EDITORS:

This is a summary of recent activities to extend the orbital life of Skylab.

NASA has successfully placed America's 77,111-kilogram (85-ton), 36-meter (118-foot) long space station, Skylab, in an orbital position which hopefully will give it a "new lease on life."

A team of engineers and controllers from the Johnson Space Center, Houston, Texas; Marshall Space Flight Center, Huntsville, Alabama; IBM and three tracking stations -- Bermuda; Madrid, Spain; and Goldstone, California -- have completed a four-month plan of scheduled events to stabilize and trim the orbital position of Skylab.

- more -

Maneuvers which began Friday, June 8, and ended Sunday, June 11, placed the space station in an attitude which reduces the atmospheric drag on the vehicle at its orbital height of 389 kilometers (242 statute miles).

Assuming continued functioning of the gyros, this new attitude is hoped to extend by six to 12 months the orbital lifetime of Skylab -- to late 1979 or early 1980. This should give NASA additional time to possibly implement a plan it is considering with an early Space Shuttle test flight to carry out a Skylab reboost into higher orbit or controlled deorbit for maximum safety into a remote ocean area.

The weekend maneuvers climaxed activities that began last March when engineers and flight controllers at the Bermuda tracking station began checking out various Skylab systems which would be used and bringing Skylab's batteries to a fully-charged state.

On Thursday, June 8, flight controllers turned on the dormant control moment gyros (CMG's) which make up a portion of the Skylab attitude control system used to maneuver the space station into a position and hold it. The other part of the system is the thruster attitude control system (TACS) which expels nitrogen gas through nozzles to move Skylab into various attitudes as it orbits Earth.

Both systems are controlled by a computer which has various sensors to indicate position.

Two of the gyros were activated and worked as expected. A third gyro failed during the last Skylab manned mission in 1974 and is not being used.

On June 9, Skylab was commanded into a solar inertial attitude (in which the spacecraft solar cells always face the Sun) using the TACS and stayed in that position under CMG control. However, a spurious signal from an onboard switch selector during subsequent commanding caused Skylab to move from this position. The vehicle automatically switched control to the TACS. On the next orbit, the vehicle was returned to solar inertial and placed under CMG control. For this reason, engineers decided to delay the final maneuver to the low-drag attitude for a day so that Marshall engineers could perform simulations to understand the problem and hopefully prevent it from recurring.

Early Sunday, June 11, Skylab was maneuvered into its desired "end-on-velocity-vector" attitude in which the docking port is forward and its long axis is parallel to the ground and along the flight path.

- more -

It remains in this position with its TACS inhibited and engineers are continuing to monitor Skylab and to periodically transmit minor corrections to the onboard computer which is maintaining the position.

Skylab was launched May 15, 1973, and was manned during three missions by three different astronaut crews. The last crew departed Skylab February 8, 1974, at an altitude of 445 km (276 statute miles). Skylab presently is 389 km (242 statute miles) above Earth.

At the time the final crew departed, NASA estimated that the orbiting workshop would remain in space until 1983 permitting ample opportunities to reach it on Space Shuttle missions. However, since that time the orbit has decreased at a higher-than-anticipated rate. Contributing to the more rapid rate of descent is an increase in atmospheric drag caused by heavier sunspot activity than had originally been predicted.

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June 19, 1978

Reviewed and
approved by:
Hermann Thomason
Bill Peters
Pete Frank

Wrap-up Skylab reactivation release

DRAFT

Charles Redmond 5111

June 13, 1978

EFFORTS TO EXTEND SKYLAB'S ORBITAL LIFE ARE SUCCESSFUL

America's 85-ton, 118-foot long space station, Skylab, has been successfully placed in an orbital position which is expected to give the vehicle a "new lease on life."

Fighting unknown odds, using procedures developed in real time as the mission progressed, and with a team of people pooled from the Johnson Space Center, Marshall Space Flight Center, Goddard Space Flight Center, IBM, and three tracking stations - Bermuda, Madrid, and Goldstone, California, the Space Agency succeeded in a 4-month-long effort to stabilize and trim the orbital position of the space station.

- more -

Attitude maneuvers which began Friday, June 8, and ended on Sunday, June 11, placed the space station in an attitude which reduces the atmospheric drag on the vehicle at its orbital altitude of 242 statute miles. This new attitude is expected to extend by 6 to 12 months the orbital lifetime of the Skylab.

The problem of keeping the space station in orbit was not expected and is due to sunspot activity. Sunspot predictions can be made but are not sufficiently refined at this time to accurately predict over long periods. The science is expanding the understandings of sunspots and other solar phenomenon are progressing, but in 1974 when the last manned crew left Skylab, NASA's predictions estimated an orbital life through 1982 -- plenty of time to use the space shuttle for any Skylab operations.

Late last year tracking of the vehicle by the North American Air Defense Command (NORAD) indicated that Skylab/s altitude was descending at a rate much higher than predictions.

NASA's Marshall Space Flight Center, developers and project managers for the Skylab mission, began working full time on the problem of sunspot activity and the Skylab's orbit. A team in Houston began to design an operations center for the proposed Skylab reactivation. Various individuals who had worked closely with the development

of the onboard computer and guidance system were rounded up to complement the Marshall-Johnson Space Center teams.

In late April the Skylab control room was activated. The flight controllers spent the latter part of April, and May bringing the batteries aboard Skylab up to a fully charged state and checking out the various other peices of equipment which would be used.

Activity at the Skylab control room really picked up in June. On Thursday, June 8, flight controllers turned on the dormant control moment gyros. The momentum gyros are one of two attitude torque generating systems which are used to maneuver the space station into a position and hold it. The nitrogen thruster system is the other. Both systems are controlled by the computer which has various sensors to indicate position.

The momentum gyros worked as expected, although only two of the three aboard the space station are left. The third momentum gyro malfunctioned during the last manned mission in 1974.

On Friday, June 9, flight controllers used the vehicle's sun sensors as an indicator of the vehicle's position and at the right moment commanded the vehicle to stabilize. On the first possible attempt to stabilize the vehicle, controllers got their cue and

commanded the space station to hold its position. This caused the onboard computer to fire nitrogen thrusters, arresting Skylab's rotation. Although the attitude control system hadn't been used in over four years, the system performed perfectly and within several minutes the space station had settled down and had gone into a stable position pointed within 20° of the Sun.

Flight controllers manually maneuvered the Skylab in roll and pitch to center the vehicle on the Sun. The gravity gradient forces then settled the Skylab into the orbital plane flying rear end first and flight controllers had to yaw the vehicle 180° to turn it around so it was flying in the proper direction.

Before the time Skylab was captured out of its wobbling and spinning position and stabilized, electric power from the solar panels was available only when illuminated by the Sun. The ground team had to get the space station into a position with the solar panels exposed continuously to the Sun so Skylab's batteries could be continuously charged and the rest of the planned activities could be performed with sufficient electrical energy. The vehicle solar inertial position is the best attitude for this since the vehicle tracks the Sun with the solar panels always into the Sun.

A maneuver planned for Saturday, June 10, was postponed a day so the Marshall engineering team could verify by ground computer simulation that a problem which occurred about noon on Friday wouldn't repeat. On Friday morning the vehicle had been commanded into the solar inertial position. The maneuvers to achieve a stable space station had consumed a considerable amount of the nitrogen stored aboard. Flight controllers wanted to enable the redundant computer onboard which could take over control if the prime computer should fail. In the process of commanding the vehicle to turn on the redundant computer a decoder onboard the space station issued an extraneous command which shut off the control servo unit on one of the momentum gyros, making it to be non-responsive to computer commands. This occurred as the space station was passing away from the ground tracking station. The problem was corrected during the next station pass but resulted in using about one fifth of the nitrogen gas remaining.

The computer aboard Skylab continued to compute attitude control based on its programmed knowledge of two working momentum gyros. With only one momentum gyro the computer was getting into a situation where it sensed the vehicle wasn't maintaining its position. When the computer sensed the vehicle had failed to hold its position, it automatically fired the nitrogen system to regain attitude control. This happened three times before the space station

was again in tracking station coverage and controllers could activate the inadvertently disabled momentum gyro. Press accounts at the time said the vehicle had gone out of control. It had gone out of the planned mode of control, but within the program the computer was working from, the vehicle remained within control with the nitrogen system and when it came back into tracking station coverage had maintained its position.

By Saturday, June 10, the Marshall team had verified by ground computer simulation back in Alabama that their understanding of the problem was complete and everything was looking good for the final maneuvers scheduled for early Sunday morning.

At 1:50 a.m. CDT, Sunday, June 11, Skylab was commanded to go from solar inertial position to "Z-local vertical." The ZLV position keeps the space station's long axis parallel to the surface of the Earth that it's over at any given moment. The space station executed the command flawlessly and the stage for the final, minimum drag, position was set. During the next station pass at 3:28 a.m. CDT the vehicle's computer was commanded to modify the ZLV position by allowing the Skylab to roll so the solar panels match the Sun's changing position in the sky. The Sun changes with respect to the Skylab orbit about three degrees per day. This placed the vehicle in what is the thinnest profile in its orbit.

The next step is to maintain the Skylab in good health until early 1980 so the development and testing of the space shuttle can be completed and work on the teleoperator retrieval system can be completed. Present options include either a reboost to a higher altitude or a deliberate deboost over an unoccupied portion of the Earth's oceans. Both options would use the teleoperator system which would be carried up and recovered by Shuttle. A space shuttle crew would fly up to the Skylab and the teleoperator would then be remotely flown and docked with the Skylab to perform this reboost/deboost mission.

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Supplemental release to Skylab reactivation release

DRAFT

Charles Redmond 5111

June 13, 1978

SUNSPOTS AND THE ORBIT OF THE SKYLAB

The idea of sunspots affecting the orbital altitude of a space station situated several hundred miles above the Earth is difficult for non-experts to comprehend. The popular idea is that the atmosphere quits about 100 miles up and beyond that lies the vacuum of space.

Actually the Earth's atmosphere continues well into space with varying densities according to altitude. The troposphere, or weather layer, extends to 13 kilometers and is the atmospheric layer which most affects our daily lives. Beyond the troposphere lie several other tenuous layers. Perhaps the most well known of these is the ionosphere, which begins at about 60 kilometers

- more -

and doesn't really quit until about 20,000 miles from the Earth's surface. It is in this layer that the two van Allen radiation belts lie. It is also in this layer, over the poles, where the beautiful aurora occur. Beyond 20,000 miles there is still an atmosphere of sorts, though it is created by the Sun's activities.

The Sun spews forth matter and energy referred to as the solar wind. This wind extends out into the further reaches of our solar system and continues beyond, into interstellar space.

As the Sun spews forth greater amounts of matter and energy during high sunspot periods, which occur regularly every 11 years, the energy heats the Earth's ionosphere. The ionosphere is much like a gas and as it is heated it expands, more molecules and ions from lower altitudes fill more space at higher altitudes.

This increasing density cause the velocity of objects in space, such as Skylab, to slow. The physics of placing an object in Earth orbit are determined by many factors, but orbital speed is related directly to orbital altitude. An object in a particular orbit will decay to a lower orbit if its speed decreases.

- more -

This is exactly what the Skylab vehicle has done. The solution to this problem is to place Skylab in an orbital position where it presents the thinnest profile to the atmosphere as it flies through space at about 17,500 mph, minimizing the loss of potential energy.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release
June 23, 1978

RELEASE NO: 78-26

METEORITE FRAGMENT CONFIRMED AS RARE TYPE

A meteorite found last winter in the frozen reaches of the Antarctic has been confirmed by both the National Aeronautics and Space Administration and the Smithsonian Institution to be one of the rarest types of meteorites ever found. The meteorite fragment, which has not yet been named, was found by Dr. William Cassidy, of the University of Pittsburgh, while on an expedition sponsored by the National Science Foundation specifically to search for meteorites.

This rare meteorite, called a carbonaceous chondrite because of its high carbon content, was found with what is believed to be another similar sample and about 300 other specimens.

The meteorite fragment was examined by a team of meteorite experts at the Johnson Space Center on Thursday, June 8. The team consisted of Dr. Everett Gibson, Johnson Space Center geochemist, Dr. Carleton Moore, director of the Center for Meteorite Studies at

- more -

Arizona State University, and Dr. Elbert King, University of Houston Geology Department. The examination took place with the meteorite inside a lunar-type glove box flushed with dry nitrogen gas. A binocular microscope was used for the initial examination.

Dr. Brian Mason of the Smithsonian Institution and one of the leading experts on meteorites was sent a .4 gram (point four gram) sample from the meteorite fragment and provided further petrographic analysis using thin sections from the sample.

The carbonaceous chondrite which was examined is a 19.91 gram (nineteen point nine-one gram) sample which has an overall charcoal grey color with a slight olive green cast. The interior consists of a fine-grained grey matrix with about two to three percent light inclusions called chondrules.

The meteorite fragment is a Type II carbonaceous chondrite, not the rarest sample which are Type I's, but the next rarest type. Fifteen other Type II samples have been found, though none in so clean a condition and so well preserved. The Type II carbonaceous chondrites have previously been shown to contain amino acids of a non-terrestrial origin. This suggests the chemical formation of complex organic molecules can occur in other regions of our solar system. Carbonaceous chondrites, like other meteorites, are 4.5 to 4.6 billion years old. This age is believed to be

the age of other bodies in our solar system.

Fragments from this meteorite sample are expected to expand our knowledge of the chemical and physical evolution processes of the early solar system and to enhance our knowledge of the regularity of this evolution in other planetary systems.

The space center in Houston is providing special handling and curatorial service for the meteorite collection since the fragments were found in what has been called the "cleanest conditions under which meteorites have been recovered."

The special precautions being taken in the examination and curation of the meteorites arises out of the belief that the fragments have not been significantly contaminated since their arrival on Earth. The samples have been preserved under excellent conditions in the Antarctic where the constant cold and extremely dry air are considered to have preserved the samples in a near-pristine state.

Subsequent analysis is expected to begin in the future after the meteorite fragments have been characterized, sectioned into smaller pieces, and fully documented. The new meteorite processing laboratory at the space center has begun to process and classify the remainder of the collection. Samples will be sent as soon

as possible after characterization to investigators for further. detailed examination.

A special newsletter covering the processing and documentation of the samples is being prepared by space center lunar and planetary science curatorial staff and will be distributed periodically to researchers in the field.

It is also expected that the Cassidy team will pursue their meteorite search again this winter in the Antarctic.

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14, June 1978

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milt Reim

For Release:
June 29, 1978

Release no: 78-27

NEW ASTRONAUT CANDIDATES ARRIVE AT JSC FOR TRAINING

Thirty-five new astronaut candidates are scheduled to be onboard by July 10, 1978, at the NASA Johnson Space Center, ready to begin a two-year training and evaluation period.

Formal training will begin on Tuesday, July 11, with all 35 astronaut candidates participating. Activities scheduled the remainder of July here at JSC include aircraft life support and ejection seat training for the T-38 aircraft, aircraft physiological training, T-38 aircraft systems and operations, and T-38 checkout flights.

July 31 through August 3 the astronaut candidates will travel to Homestead Air Force Base in Florida for the standard air force water survival course given by USAF instructors.

In subsequent weeks the candidates will attend lectures on the history of spaceflight, technical assignment methods and procedures within the astronaut office, lessons on manned spacecraft engineering, Space Shuttle program, aerodynamics, flight operations, and the many disciplines associated with preparation for and operation of vehicles in space.

Instructors and lecturers for the series of lessons and briefings will be astronauts, engineers, management, and support contractors here at JSC.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-28

July 3, 1978
3 p.m. CDT

MAC-DAC PACT EXTENDED

The NASA Johnson Space Center, Houston, plans to award a third increment extension to the contract with McDonnell Douglas Technical Services Company, Inc. for Space Shuttle engineering and operations support at the Center. The two-year cost-plus-award-fee follow-on to the contract which expired March 31, 1978 is valued at \$33.4 million.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-29

June 30, 1978
2 p.m. CDT

ALSO RELEASED AT NASA HEADQUARTERS

COMPUTER SCIENCES GETS JSC COMPUTER SYSTEMS CONTRACT

The National Aeronautics and Space Administration has selected Computer Sciences Corp. of Falls Church, Virginia, for negotiations leading to the award of a cost-plus-award-fee contract for performance of institutional computer systems engineering, development and production operations work at Johnson Space Center, Houston, for a five-year period. The contractor's estimated cost for the first three years is approximately \$40 million.

Computer Sciences Corp. will perform systems engineering and definition, applied software development and computer systems and related facility planning and development for the Central Computing Facility (CCF) and computer operations for the CCF and Mission Control Center. The computer operations function includes equipment operations, job scheduling and processing, dispatch services, job quality control, maintenance of tape libraries, production coordination and other related tasks.

- more -

The contract will be under the management and technical direction of the Johnson Space Center and will be for that portion of the work currently being performed by Lockheed Electronics Co., Inc., of Houston, at Johnson, which provides data systems development, programming, operations support and engineering of those facilities under the management responsibility of the Institutional Data Systems Division and for facility operations support of the Data Computation Complex (formerly the Real-Time Computer Complex) under the management responsibility of the Ground Data Systems Division.

Proposals were also submitted by: Lockheed Electronics Co., Inc., Systems and Services Division, Houston; KENTRON International, Inc., Dallas; and ITT/Federal Electric Corp., Paramus, New Jersey.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-30

July 17, 1978
2 p.m. CDT

IBM CONTRACT ADD-ON COVERS SHUTTLE AVIONICS SOFTWARE

The NASA Johnson Space Center, Houston, has signed a supplemental agreement to the cost-plus-award-fee contract with IBM Federal Systems Division of Gaithersburg, Maryland, covering developing and testing software for the Space Shuttle Orbiter avionics.

The supplement also covers Orbiter test and laboratory support at Johnson, Kennedy Space Center and at Rockwell International's Orbiter assembly plant at Palmdale, California.

Valued at \$38,869,509, the supplement brings the total IBM contract value to \$92,778,943.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 78-31

July 17, 1978

SPACE WEEK PROCLAIMED

The Office of the Governor and the Mayor's Office, Houston, have announced this week as "Space Week." To commemorate the week, the Johnson Space Center will have a space film festival, beginning each day at 9:15 a.m. and continuing through 4:30 p.m. The films are a chronology of the space missions starting with the Mercury project, going through the Gemini missions, the Apollo missions to the Moon, the Skylab missions and the Apollo-Soyuz Test Project.

Three times a day, at 10:55 a.m., 1:05 p.m. and 2:45 p.m., a Space Shuttle briefing will also be given.

All these events take place in the main auditorium in the Visitor Center, Building 2, at the Johnson Space Center.

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NASA News

National Aeronautics and
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Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

RELEASE NO: 78-32

July 24, 1978

ASTRONAUT CANDIDATES LEARN WATER SURVIVAL TECHNIQUES

Sixteen astronaut candidates from the NASA Johnson Space Center in Houston are scheduled to spend three days in training at the Homestead Air Force Water Survival School in Florida, beginning July 31.

Most of the 35 astronaut candidates had the water survival training prior to entering the NASA program. Included in the 16 that will take the training are the six female astronaut candidates.

Each day's activities during the course will include classroom lectures on water survival techniques plus actual training in the water environment. Briefings on procedures will precede each activity.

The training includes jumping from a tower wearing a tethered parachute harness while sliding down a wire to a landing in the water. The candidates will also be towed through the water in a

- more -

parachute harness, simulating a parachute dragging one across the surface and having to release one's self.

Other exercises will require the astronaut candidates to be towed aloft under a parasail canopy, land in the water, and be picked up by a boat. On the final plunge into the water via parasail, the astronaut candidates will be coming down with full survival gear. A helicopter will pick them up from their life raft.

The USAF Water Survival School is operated by the 3613th Combat Crew training squadron with headquarters at Fairchild AFB, Washington.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release:

RELEASE NO: 78-33

July 26, 1978

JOE ALLEN RETURNS TO JOHNSON SPACE CENTER ASTRONAUT OFFICE

Dr. Joseph P. Allen, scientist-astronaut has returned to active flight status in the Astronaut Office at the NASA Johnson Space Center.

From August 1, 1975 until his return to JSC, Allen has served as Director, Office of Legislative Affairs at NASA Headquarters in Washington, D.C. He will continue the duties of that post in addition to his astronaut duties until a replacement is named.

Allen returns to JSC as a senior scientist-astronaut and will be eligible for selection as a Space Shuttle crewman.

Allen was selected as a scientist-astronaut by NASA in August 1967. He completed the initial academic training and a 53-week course in flight training at Vance AFB, Oklahoma.

He served as mission scientist while a member of the astronaut support crew for Apollo 15 and served as staff consultant on science and technology to the President's Council on International Economic Policy.

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NASA-JSC

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

RELEASE NO: 78-34

For Release:

August 1, 1978
2 p.m. CDT

MISSION SPECIALISTS FOR SPACELAB 1 NAMED AT JSC

Astronauts Dr. Owen K. Garriott and Dr. Robert A. Parker have been selected by NASA to serve as Mission Specialists on the Spacelab 1 mission which is scheduled for the early 1980's.

This first flight of Spacelab is planned as a seven-day flight and is primarily for the verification testing of the Spacelab systems and Spacelab and Orbiter interfaces. In addition, approximately 40 experiments will be on board.

Garriott flew on the second manned Skylab mission of 59 days duration. Experiment operations on that flight were very successful and involved a multiplicity of experiments in several disciplines.

Parker served as Mission Scientist and Spacecraft Communicator during Apollo and Skylab. On Skylab he made many of the decisions that insured the successful accomplishment of experiments during the flight. For the past four years Parker has been actively involved in reviewing all aspects of the development of Spacelab for the Astronaut Office.

Mission Specialists have the overall responsibility for the coordination, with the Commander and Pilot, of Space Shuttle operations in the areas of crew activity planning, consumables usage, and Shuttle Transportation System/payload interaction.

Spacelab, developed and financed by 10 European nations under agreements concluded with the European Space Agency, will be carried in the cargo bay of the Shuttle Orbiter.

The lab will supply investigators with a fully furnished laboratory adapted for the weightless environment of space and pressurized for working without spacesuits.

In addition to the Commander, Pilot and two Mission Specialists, Spacelab 1 will include two Payload Specialists, one European and one U.S. citizen who have primary responsibility for operating the science instruments.

With six crewmen onboard it will be possible to have two operational shifts of three crewmen each, consisting of a Mission Specialist, Commander/Pilot, and Payload Specialist.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release.

Release No: 78-35

August 9, 1978

NASA, USGS PUBLISH FAULT MAP OF SOUTHEAST GREATER HOUSTON AREA

The United States Geological Survey and the National Aeronautics and Space Administration, Johnson Space Center, announce the publication, by the USGS, of a surface fault map of southeastern Harris and portions of Galveston and Brazoria Counties.

The fault map, covering about 200 square miles of developed and undeveloped land is the result of work by JSC geologist Uel Clanton and Earl Verbeek of the USGS. It was undertaken jointly by NASA and the USGS to evaluate the magnitude of the faulting problem in the metropolitan Houston area.

The map covers that portion of Harris, Galveston, and Brazoria Counties bounded by Clear Lake in the south, Loop-610 and Texas-225 in the north, about two miles west of Texas-35 in the west, and Texas-146 in the east.

Ninety-one faults with a total length of 110 miles are shown on the map.

Urban portions of the Houston metropolitan area encompassed by the map include part or all of the cities of Pasadena, LaPorte, South Houston, Taylor Lake Village, El Lago, Seabrook, Webster, Brookside, Pearland, Friendswood, Nassau Bay, and the southeast section of Houston.

Faults cut through residential and commercial areas in many of the cities listed above. Faulting is extensive east and southwest of Hobby Airport. Non-developed portions of the southeastern quadrant of Harris County which are crossed by faults are in the areas of the Clear Lake, Friendswood-Webster, South Houston and Mykawa oil fields. The Mykawa oil field in particular has extensive faulting in both a northwesterly and northeasterly direction.

The map was produced using a combination of aerial photography and ground-level confirmation of the faults. The map should be used as a general guide to the prevalence of faulting near any particular locality and it should not be used in the absence of site-specific studies. The map should be considered to be a minimum statement on faulting, and should be supplemented by more detailed local studies wherever faulting may pose a significant hazard to anticipated land use, especially along extensions of mapped faults or in an area of extensive faulting.

The high side of a fault is called the upthrown side. The physical feature at the break is called a scarp. The low side is called the downthrow side. Typical scarps in the southeastern Harris County area have heights of between one and two feet. Fewer than five percent of the scarps are higher than three feet.

Faults in the urban areas of the map's coverage are probably underrepresented since only active and damaging faults are readily detected. Inactive or slowly moving faults, and all faults in newly developed areas where damage is not yet severe may escape notice unless the scarp is of substantial height or has not been destroyed by landfill or excavation during the development.

Examination of the map shows that nearly all of the faults are confined to two well-defined, curvilinear belts which bear a close relationship to oil fields in the area. The association is not accidental. All major fields shown on the map are known or thought to be producing from sediments above or peripheral to salt domes. It is believed that the formation of the domes and the faulting are genetically related.

The faults are natural geologic features of antiquity. Seismic and drilling data reveals that the faults persist to depths of thousands of feet and show clear indications of prehistoric movement extending over millions of years.

There is ample evidence for a prehistoric origin of the faults, and for prehistoric motion along them. Unresolved is the question of why many faults are so active today. It can be documented that natural movement on some faults persisted into the very recent geologic past, and is likely continuing. However, contemporary rates of movement along many faults, which range up to one-inch per year, are in excess of what has occurred in the past.

If the contemporary rates were characteristic of the recent past, there should be many fault scarps over 30 feet. The largest fault on the map has a scarp height of little more than three feet. The present anomalous rate of movement may be the result of human activity, specifically petroleum and ground water production.

The extraction of large quantities of water from shallow sediments beneath the city, and production of petroleum from somewhat deeper levels, has resulted in large declines in fluid pressures within the subsurface sediments. Inasmuch as a link between fluid-pressure declines and land-surface subsidence is well established, it may be that the withdrawal of water and petroleum products is somehow triggering or accelerating motion along preexisting faults as well.

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

Release No: 78-36

August 9, 1978

SYMPOSIUM TO DISCUSS RESULTS OF MAJOR CROP MONITORING EXPERIMENT

For three years the U.S. government, working with university and industrial research groups, has been involved in a major experiment to determine if wheat production in major growing areas throughout the world could be estimated using data from satellites and the global weather observing network.

The Department of Agriculture, the National Oceanic and Atmospheric Administration have been cooperative partners in the Large Area Crop Inventory Experiment, known as LACIE.

This October 23-26, results from the three-year-long experiment will be discussed at the first major symposium on crop monitoring based on space-age technology. The symposium will be held at the Johnson Space Center, Houston, Texas. The topics range from the general, such as the state of existing global crop forecasting, to the specific, such as how to estimate sampling size for the statistical analysis used by the computers. This symposium will be a complete reporting on the conduct and results of the experiment.

The LACIE experiment was begun in the fall of 1974. At that time the USDA felt the need for an improved source for global crop information. In the United States, the USDA has already established a reliable and timely crop reporting system but for many important wheat-growing areas, throughout the world, information is very limited.

The LACIE experiment involved the research, development and testing of an

emerging technology known as remote sensing, combined with conventional weather data, to monitor and inventory agricultural commodities on a global scale.

Wheat because of its great importance in trade and human nutrition, was the primary commodity investigated for this experiment. Electronic imagery from space was gathered by the Landsat orbiting satellites which continually scan the agricultural regions of Earth and provide data for area estimates. Daily data from 8,000 worldwide weather stations were used both to make timely predictions of crop area, yield and production in domestic and foreign wheat growing regions and to provide an early warning of problems.

The effort on the LACIE experiment took skills in many technical fields. Earth resources scientists were involved in identifying the "signature" or appearance of wheat in the satellite data. Other scientists were involved in the development of techniques to estimate the growth stage of wheat. Computer programs were written to examine weather conditions along with the crop yields achieved in past growing seasons in order to estimate the yield for the current growing season, and to combine area and yield estimates for wheat production reports.

The experiment centered on the hard red wheat crop in the U.S. Great Plains, where detailed data is available, for comparison and testing of the technology. Comparisons were made with USDA reports and ground truth gathered by county agents over many sites.

The LACIE activity is now nearing completion, and the results show that this new technology can be used effectively in improving the knowledge of global wheat production. The technology is believed to be generally applicable to other crops and the USDA is currently considering the use of this new technology as a data source to aid them in their responsibility to provide early warnings of significant changes in the global commodity production outlook.

The four-day symposium, to be held at NASA's Johnson Space Center, Houston, Texas will conclude the experiment. People from government, industrial agricultural, and university communities around the world will be attending to learn more about this pioneering effort, and to discuss how this new technological tool can best be utilized to improve the world food situation.

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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Milton Reim

For Release:

Release No: 78-37

August 15, 1978

FORMER NASA ASTRONAUTS TO ATTEND BRIEFINGS AT JOHNSON SPACE CENTER

Astronauts formerly with the NASA space program have been invited to the Johnson Space Center by Dr. Christopher C. Kraft, Jr., center director, for a series of briefings on present and future programs.

Invitations were extended to 31 of the former astronauts to take part in technical briefings and to bring them up to date on the status of the NASA programs. The briefings will take place August 21 and 22 at the space center.

The agenda includes a NASA overview by administrator Dr. Robert A. Frosch and a review of the Space Transportation System by John F. Yardley, associate administrator for STS, Washington, D.C.

Robert F. Thompson, manager, Space Shuttle Program at JSC will brief the former astronauts on that program, and Aaron Cohen, manager of the Orbiter Project will brief them on the Shuttle Orbiter.

A Space Transportation System Operations briefing will be given by Glynn S. Lunney, manager, Shuttle Payload Integration and Development Program.

Lt. Gen. Thomas P. Stafford, deputy chief of staff for Research, Development and Acquisition will brief the group on the U.S. Air Force Shuttle Program.

A review on the Approach and Landing Program, the Orbital Flight Test status of Shuttle and the current activities with Skylab will be presented to the assembled group of former astronauts by Donald K. Slayton, manager for Orbital Flight Test.

John Young, chief, Astronaut Office, will bring the group up to date on crew selection and training, and a briefing on Flight Control Operations will be presented by M. P. "Pete" Frank, chief, Flight Control Division.

A briefing on global food and fibre inventory will be given by W. E. Rice, manager, Earth Resources Program, and Robert O. Piland, associate director for Program Development, Engineering and Development, will brief the former astronauts on the solar power satellite.

The flight crews of the Orbiter Approach and Landing Tests will brief the group on their flights, and Jerry C. Bostick, manager, Payload Deployment and Retrieval Systems Office will brief the group on US/USSR Joint Space Program Status.

A briefing on what we have learned from the Moon rocks will be given by John R. Sevier, associate director of the Lunar Planetary Institute.

While here at JSC, inspection tours will be conducted for the former astronauts of the Crew Systems area, remote manipulator system, full-scale orbiter mockup, and the Orbiter Aeroflight Simulator/Shuttle Mission Simulator.

The former astronauts will also be offered the opportunity to have one-on-one sessions with other astronauts and management heads at JSC during the two day session.

Several of the former astronauts will take their annual physical while here at JSC during the two day session .

The 31 former astronauts invited for the two day briefing sessions are:
Edwin E. Aldrin, Jr., William A. Anders, Neil A. Armstrong, Frank Borman,
M. Scott Carpenter, Gerald P. Carr, Eugene A. Cernan, Michael Collins, Charles
Conrad, Jr., L. Gordon Cooper, Walter Cunningham, Charles M. Duke, Jr., Donn
F. Eisele, Anthony W. England, Ronald E. Evans, John H. Glenn, Richard F.
Gordon, Jr., James B. Irwin, James A. Lovell, Jr., James A. McDivitt, Edgar
D. Mitchell, William R. Pogue, Stuart A. Roosa, Walter M. Schirra, Jr.,
Harrison H. Schmitt, Russell L. Schweickart, David R. Scott, Alan B. Shepard,
Jr., Thomas P. Stafford, John L. Swigert, Jr., and Alfred M. Worden.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release:

RELEASE NO: 78-38

August 18, 1978

JSC TO ASK THINK TANK TO STUDY FUTURE CENTER ROLE

Will controlling 40 to 60 Space Shuttle flights per year limit the Johnson Space Center's ability to perform its basic role of research and development? How can costs be kept low to encourage maximum use of the versatile space transportation system? How will this increased activity affect relationships with other NASA centers and contractors?

A management consulting firm will be asked to help answer those and other questions after a nine-month, \$500,000 study. Joseph P. Loftus, Chief of JSC's Technical Planning Office, said a request for proposals (RFP) on the study will be issued today.

- more -

"Another area to be reported on is the management philosophy here and the relationship between civil service responsibilities and those which are or could be contracted," he said.

Space Shuttle launches are expected to reach the approximate one per week rate by 1985. JSC officials want to be certain that flight operations of that magnitude do not drain off already limited personnel and other resources needed for the Center's principal role as a major research and development arm of the space agency.

Planners here have already drafted a baseline operations plan which covers the mature Shuttle era. The onboard capabilities of the vehicle are greater than in previous spacecraft, so the plan reduces the number of flight controllers assigned to real-time operations on the ground and increases the effort spent on flight planning.

Because the flight control work here affects NASA-wide operations, and because JSC is a key element in future space flight research and development, Center management wants an outside examination of the plan and alternatives prior to committing to it.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Milton Reim

For Release

Release No: 78-39

August 23, 1978

ASTRONAUT CANDIDATES TO TAKE PARASAIL TRAINING AT VANCE AFB, AUGUST 28

Eleven of the 35 astronaut candidates are scheduled for parasail training at Vance Air Force Base, Enid, Oklahoma on Monday, August 28.

The training will familiarize them with the proper procedures for landing by parachute in the event they were to make an emergency ejection from T-38 aircraft over land.

Training of this type was accomplished by the other astronaut candidates before they entered the NASA program.

The six female astronaut candidates along with five of their male counterparts will take part in the one day training exercise.

Astronaut candidates taking part in the training are: Anna L. Fisher, Steven A. Hawley, Jeffrey A. Hoffman, Shannon W. Lucid, Ronald E. McNair, George D. Nelson, Ellison S. Onizuka, Judith A. Resnik, Sally K. Ride, Rhea Seddon, and Kathryn D. Sullivan.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release
September 7, 1978

RELEASE NO: 78-40

SHUTTLE MANEUVER ENGINE TESTED AT WHITE SANDS

A test version of the rocket engine that will be used to maneuver the Space Shuttle Orbiter was test fired September 6, at the NASA White Sands Test Facility near Las Cruces, New Mexico.

The 10-second duration burn was the first test firing of the 6000-pound thrust engine in combination with the propellant tanks, feedlines and other components in the Orbital Maneuvering Subsystem (OMS) pod. Shuttle Orbiter has OMS pods on each side of the aft fuselage and adjacent to the three 470,000-pound thrust main engines that boost the spacecraft into orbit.

The OMS engines burn nitrogen tetroxide and monomethyl hydrazine as oxidizer and fuel, and are designed to be reuseable for up to 100 space missions with 1000 starts for a total 15 hours firing lifetime. Among the orbital duties of the OMS engines are thrust for final orbital insertion at the end of launch phase, orbit circularization, orbit transfer and changing, rendezvous maneuvers and deorbit burns.

Wednesday's test firing was a checkout of the OMS pod and test stand compatibility and of the test data system.

The first series of 24 engine firings up to 60-seconds duration was completed the following day.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-41

September 8, 1978

NASA AMENDS FORD CONTRACT

The NASA Johnson Space Center, Houston, Texas, has signed a supplemental agreement to the contract with Ford Aerospace and Communications Corporation covering ground data hardware and software systems engineering, maintenance and operations.

The \$1,887,109 supplement brings the total value of the cost-plus-award-fee Ford contract to \$55,927,517. Ford operates Mission Control Center and other ground-based data systems at JSC.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-42

September 19, 1978
2 p.m. CDT

ITEK TO BUILD ORBITER CAMERA SYSTEM

The NASA Johnson Space Center, Houston, has signed a contract with Itek Optical Systems Division of Lexington, Massachusetts, for the Space Shuttle Orbiter Camera Payload System. The cost-plus-incentive-fee contract is valued at \$4,890,000 and covers the first flight system and an option for a second system.

Planned for space flight in Orbiter's 15 by 65-foot cargo bay on pallets and test racks built by NASA or by the European Space Agency (ESA), the Orbiter Camera Payload System is a flexible photographic array for Earth imaging surveys, remote sensing experiments and as an adjunct to non-imaging systems.

The second option covers a large format camera for the U.S. Geological Survey, and if exercised, will increase the contract value by \$1.5 million.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

RELEASE NO: 78-43

For Release:

September 22, 1978
2 p.m. CDT

JSC SELECTS GENERAL ELECTRIC COMPANY FOR SHUTTLE FOOD GALLEY

The NASA Johnson Space Center has selected General Electric Company, Space Division, Valley Forge, Pennsylvania, for negotiations leading to a contract for the Space Shuttle Orbiter Food System Galley for the Space Shuttle Program. The contract will be under the management and technical direction of the Johnson Space Center, Houston, Texas.

The contractor's estimated cost and fixed fee for the program is approximately \$1.2 million. The contract will begin December 1978, and end January 1981. The contract effort will be performed in Valley Forge, Pennsylvania.

The galley contract will be for a food preparation facility providing food preparation equipment (hot and cold water dispensers, oven, hot water heater) and serving equipment (meal trays).

Other firms proposing were Fairchild Republic Company, Farmingdale, L.I., New York, and the Nelson and Johnson Engineering, Inc., Boulder, Colorado.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Robert Gordon

For Release:

RELEASE NO: 78-44

September 25, 1978
8:30 a.m. CDT

ALSO RELEASED AT NASA HEADQUARTERS

NOTE TO EDITORS:

SPACE SHUTTLE STATUS

The following summary reviews the status of the Space Shuttle as discussed in the presentation today of John F. Yardley, NASA's Associate Administrator for Space Transportation Systems, to the House Subcommittee on Space Science and Applications.

A detailed Shuttle program review has been completed to permit an accurate, updated assessment of cost, schedule and performance. The review showed that substantial progress has been made in the program this year.

Highlights include the successful completion of the approach and landing test program of Orbiter 101, Enterprise, which has now been shipped to the Marshall Space Flight Center, Huntsville, Alabama, for mated ground vibration tests; recent mission duration test firings of the main engines at the rated power level; and the successful completion of the first phase of the three-engine configuration Main Propulsion Test Program.

With respect to overall Shuttle schedules, the review showed that all program elements could be ready for a September 28, 1979, first manned orbital flight (FMOF) if all planned tests were successful and certain work adjustments were implemented. These adjustments involve the orbiter maneuvering system (OMS) pod and the solid rocket motors (SRM), and could save about a month. September 1979 therefore has been set for the FMOF in an internal target working schedule. If unforeseen problems arise or the tests are not entirely successful, this schedule could be pushed back. However, NASA believes that there is a strong probability of flying the FMOF during CY 1979.

The program review showed the only significant Shuttle problems to be with the main engine and the vehicle's weight.

While the engine development has been slower than desired, tests show that the engine is soundly designed. Substantial progress is being made with the Shuttle engine, and if testing continues to go well the engine could be certified in time for a September 1979 FMOF.

The weight problem does not present any constraint to early flight tests, but does present some problems for both the Galileo mission to Jupiter and certain Air Force missions. However, a weight saving program in the Orbiter and the external tank can satisfy all mission requirements until mid-1984. Performance augmentations being studied would enable the Shuttle to meet the identified requirements of all missions beyond that time.

Additional funding will be required to support the revised FMOF schedule and allow the most expeditious completion of the Shuttle's design, development test and evaluation program. These funding requirements are not due to any single program element, but are due to several items, including the main engines, solid rocket boosters, external tank and thermal protection system. Generally, more work has been found necessary than was originally estimated.

Shuttle development funding required in FY 1979 and FY 1980 exceeds previous plans. Our current estimate of the total Shuttle development costs is 8 - 9 per cent higher than the early estimate of \$5.2 billion (1971 dollars).

The funding situation has been discussed with OMB and will be considered in the process of formulating the FY 1980 NASA budget. NASA is reviewing, together with the Department of Defense, the potential impact if additional Shuttle development funds are not available in FY 1979.

Our preliminary assessments show that the first manned orbital flight would be delayed an additional six to nine months over the above-estimated September date and that delivery of production orbiters would be delayed up to one year.

Copies of Yardley's complete statement prepared for the House subcommittee are available from the NASA newsroom, NASA Headquarters, 400 Maryland Avenue, S.W., Room 6043, Washington, D.C. 20546.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
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AC 713 483-5111

Charles Redmond

For Release:

RELEASE NO: 78-45

September 29, 1978

TEXAS TO BENEFIT FROM SPACE-AGE REMOTE SENSING TECHNIQUES

The National Aeronautics and Space Administration and the State of Texas have recently signed an agreement to demonstrate the usefulness of applying space-age remote sensing technology to the management of Texas' natural resources.

The agreement outlines a three-year project which is expected to lead to a statewide natural resource information management system dependent at least in part on computer-processed spacecraft data from the Landsat earth resources satellite series. Costs of the project are expected to be about \$600,000 for NASA and about \$750,000 for the State of Texas.

The Texas Natural Resource Information System Task Force and NASA's Johnson Space Center will develop, test, and evaluate approaches and procedures for integrating remote sensing data with more conventional data sources (such as census reports, maps, and field surveys). The purpose is to augment and make more effective the existing information system which already serves 13 Texas natural resource management agencies.

- more -

The participating agencies are: Texas Department of Water Resources, General Land Office, Texas Air Control Board, Texas Forest Service, Texas Industrial Commission, Texas State Department of Health Resources, Bureau of Economic Geology, Railroad Commission of Texas, Texas Department of Agriculture, State Department of Highways and Public Transportation, Texas Parks and Wildlife Department, Texas Oil and Water Conservation Board, and the Texas Coastal and Marine Council. There is a possibility that other agencies will join the project at a later stage.

The principal objectives of the project are to develop an operational, day-to-day capability, using a mix of manual and computer-assisted remote sensing analysis procedures; to inventory and monitor natural resources within Texas; to develop and integrate remote sensing technology into the Texas National Resources Inventory and Monitoring System (already in use); and to test and evaluate the resulting expanded information system in various discipline areas using the on-going management requirements of the different state agencies as the acceptance criterion.

The system will first be applied to the Texas Coastal Zone. Subsequent phases will concentrate on various application categories throughout the state: the forest regions of East Texas, the water resources of the High Plains, the agricultural regions of Central Texas, and the rangelands of West Texas.

The Texas Natural Resource Information System (TNRIS) Task Force and the Johnson Space Center will jointly design and implement the information system using Landsat satellite data as the operational base. Aircraft photographic and electronic data, ground truth measurements, and environmental data from weather stations will supplement the satellite data during the early verification phases of the project.

NASA will provide technical expertise, the satellite and aircraft data, and certain technical hardware systems. The Texas Natural Resource Information System will integrate the new system into their existing information services and will evaluate the usefulness and cost-effectiveness of this space-age methodology.

Work on the project has begun already and consists of identifying the hardware required to put the system together. The scope of the 1979 participation includes the development and initial use of the data system for the Coastal Zone area. The 1980 objectives are to refine the system and expand it to the other test areas.

The 1981 activities focus on the transfer of all documentation and techniques. NASA and the State of Texas will use existing technology transfer mechanisms, including state workshops, symposia, newsletters, and the six NASA national technology transfer centers.

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NASA News

National Aeronautics and
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Charles Redmond

For Release:

RELEASE NO: 78-46

Upon Receipt

OMB OFFICIAL TO ADDRESS SYMPOSIUM

The chief of the Office of Federal Procurement Policy, Office of Management and Budget, Lester A. Fettig, will be the keynote speaker at the annual South Central Regional symposium of the National Contract Management Association.

The symposium will be held at the Baywood Country Club, Houston, on October 26 and 27. This year's topic is "Contract Management - Now and in the Future," and deals with the most recent ideas on the subject of contract management. William R. Kelly, special assistant for management to the director of the Johnson Space Center, is symposium chairman.

Key subjects which will be discussed during the two-day symposium include contract management for energy programs and the relationship between government and industry.

This year's symposium is being presented by the Space City - Houston Chapter of the National Contract Management Association.

Registration information can be obtained from Gene Matlock, P. O. Box 58513, Houston, Texas 77058.

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October 11, 1978

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release:

RELEASE NO: 78-47

October 17, 1978
2 p.m. CDT

NASA AMENDS ROCKWELL ORBITER CONTRACT

The NASA Johnson Space Center, Houston, has amended the Shuttle Orbiter contract with Rockwell International Corporation of Downey, California, to cover 16 engineering and provisioning changes.

The \$1,445,330 supplement brings the total of the cost-plus-award-fee Rockwell contract to approximately \$3.2 billion.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

RELEASE NO: 78-48

For Release:

October 19, 1978

2 p.m. CDT

GE GETS ORBITER CHECKOUT CONTRACT

The NASA Johnson Space Center, Houston, has signed a cost-plus-fixed-fee contract with General Electric Company Space Division covering operation of Shuttle Orbiter acceptance checkout equipment (ACE).

Valued at a total \$10,974,990, the contract covers ACE test support at Rockwell International's Orbiter assembly plant in Palmdale, California and in JSC's Shuttle Avionics Integration Laboratory including systems engineering, software development, equipment maintenance, reliability and quality, and training.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release:

RELEASE NO: 78-49

Upon Receipt

SEASAT SCIENTIST TO TALK ABOUT HURRICANE MEASUREMENTS

Dr. Peter G. Black of the NOAA National Hurricane and Experimental Meteorology Laboratory, will speak on "Preliminary Seasat Measurements of Surface Winds in Hurricane Conditions," on Wednesday, November 15, at the Lunar and Planetary Institute, 3303 NASA Road One.

The lecture will be held in the Berkner Room of the LPI at 4 p.m.

The public is invited to attend the lecture. Additional information can be obtained from Dr. A. J. Irving (LPI) ac 713 488-5200 ext. 53 or Ms. Fran Waranius (LPI) ac 713 488-5200 ext. 35.

Seasat is a NASA satellite launched this past June. The Seasat mission is to determine if a spacecraft carrying microwave instruments can provide useful information about the sea surface and atmosphere, and how they interact. The payload on the satellite includes four microwave sensors and a visual and infrared radiometer. Experiment teams, drawn

- more -

from scientists representing various oceanographic disciplines will determine the geophysical significance of the microwave data. Dr. Black is a member of the team studying data from the radar scatterometer.

The Seasat failed October 10, due to system power dysfunction. Jet Propulsion Laboratory technicians have so far been unsuccessful in attempts to revive it.

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October 30, 1978

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
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AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 78-50

October 31, 1978

ALSO RELEASED AT NASA HEADQUARTERS

SKYLAB ORBITAL ATTITUDE TO BE REVERSED

The Skylab space station will be rotated 180 degrees in its orbit on Friday, November 3. The vehicle is presently flying with its docking-module forward, in the direction of flight, with the vehicle's long axis parallel to the surface of the Earth. This attitude -- called End-On Velocity Vector (EOVV) -- offers the least drag in the extremely thin atmosphere at Skylab's orbital altitude of 375 kilometers (234 statute miles).

The rotation, from what is called forward EOVV to backward EOVV is necessitated by low temperature conditions on one of the Control Moment Gyros (CMG), resulting from periodic long term shading from the Sun. The Sun angle, called beta angle, is a function of the orbit inclination (in Skylab's case, 50 degrees relative to the equator), the position of the Earth around the Sun and certain other seasonal factors.

- more -

When the CMG is shadowed for excessive periods of time, the bearing temperature drops which results in decreased lubrication and increased bearing friction leading to possible CMG failure. The CMG is essential for Skylab to hold a stable attitude.

By turning the Skylab around in its orbit, before mid-November, the CMG will be exposed to more Sun and normal temperatures can be maintained.

The reversed position of the Skylab is not expected to change the orbital life predictions by any significant amount.

The vehicle will be turned around again, back to the forward EOVV, in about six months in order to maintain proper Sun exposure to the CMG.

This maneuver is not expected to use any of the remaining nitrogen thruster fuel which is being reserved for use during docking maneuvers with the teleoperator retrieval system planned for the second Space Shuttle flight.

On Sunday, October 15, the tracking station at Santiago, Chile, was put on line for the Skylab reactivation. There are now five tracking stations supporting the Skylab mission: Goldstone, California; Bermuda Island; Ascension Island; Madrid, Spain; and Santiago. Also on Sunday the flight control operation at Houston Mission Control went to a 24-hour-a-day operation.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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Terry White

RELEASE NO: 78-51

For Release:

October 31, 1978
2 p.m. CST

NASA JOHNSON SPACE CENTER AMENDS FORD AEROSPACE MISSION CONTROL CONTRACT

The NASA Johnson Space Center, Houston, has signed a supplemental agreement to its contract with Ford Aerospace and Communications Corporation covering systems engineering and integration, maintenance, operations, reliability and quality assurance for ground data systems in Mission Control Center and in other JSC locations.

The \$78,369,800 supplement bring the total of the Ford cost-plus-award-fee contract to \$135,081,510.

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NASA News

National Aeronautics and
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Charles Redmond

For Release

RELEASE NO: 78-52

Upon Receipt

ALSO RELEASED AT NASA HEADQUARTERS

GLOBAL CROP EXPERIMENT EVALUATED

A three-year Large Area Crop Inventory Experiment (LACIE) using space age technology to monitor global wheat production has been completed.

Results of the experiment were presented at a symposium at the Johnson Space Center, Houston, Texas, attended by more than 700 conferees from 22 nations. They represented federal agencies, private companies, universities and the governments of foreign countries.

The experiment was begun in 1974 to determine if data from the Landsat satellite, orbiting some 805 kilometers (500 miles) above the Earth, could be used with surface weather observations and information derived from U.S. operational environmental satellites to predict production of the world's most important grain crop -- wheat.

- more -

The major foreign study areas were Canada and the Soviet Union, with preliminary examination of wheat-growing areas of Australia, the People's Republic of China, Brazil, India and Argentina. The U.S. Great Plains was used extensively to test and evaluate the several techniques since it was the best source of statistical data with a known reliability.

The LACIE techniques were intended to enhance the accuracy of existing global wheat production forecasts by improving foreign production forecasts and to do so as early in the crop season as possible. The accuracy goal set by the project was to develop a system which would provide estimates accurate within 10 percent of the true production in 9 years out of 10.

In tests over the winter wheat area of the Great Plains it was determined that the accuracy goal could be met. When the techniques were used to monitor the Soviet wheat crop harvested in 1977, the LACIE produced a production estimate of 91.4 million metric tons, less than one percent below the official mark of 92.0 million tons released by the Soviets. However, the capability to achieve such accuracy from year to year has yet to be demonstrated.

The findings were presented to the four-day October symposium by the LACIE participants: NASA, the Department of Agriculture (USDA), the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce and cooperating universities and industry.

In other study areas such as the spring wheat regions of the U.S. and Canada where long narrow fields are hard to distinguish and where wheat can easily be confused with other spring-planted crops, the accuracy goal was not met. Most importantly, however, LACIE was able to determine the reasons for not meeting its goals in these areas and to identify what would be needed to do so. Future satellites with improved resolution should allow smaller fields to be identified with accuracies similar to that encountered in the Soviet Union where fields are typically quite large.

A peer evaluation team composed of prominent scientists and chaired by Dr. Don Paarlberg, former Director of Economics for USDA, reviewed the LACIE techniques and presented their report at the symposium. In the report, Dr. Paarlberg stated that, "LACIE results to date clearly demonstrate that present remote-sensing capabilities can be combined with or substituted for conventional methods of information collection in order to improve crop production estimates." He concluded the evaluation of the results by saying, "... for global wheat regions such as the U.S.S.R. the LACIE technology can be made operational and that for regions where the technology requires improvement, funding for further research and development should be continued."

NASA, USDA and NOAA which collectively provided the many different skills necessary to make LACIE a success are now defining a follow-on activity to extend the application of space-age technology to agriculture.

USDA has established an office in Houston near the space center to test the usefulness of LACIE technology in crop condition assessments.

Similar to space exploration done before, the LACIE experiment provided other benefits, notably, in the area of meteorological research.

NOAA scientists used the techniques they developed to relate crop yields to weather and devised mathematical relationships for relating temperature to home heating fuel consumption. These relationships have been used in conjunction with extended forecasts during the past two years for projecting areas of the country where consumption would likely be higher or lower than normal and, thus, allocating the additional amounts of fuel needed in a better manner. This capability which has evolved represents a new national ability to assess the impact of climatic fluctuations and will be extended to other critical national resources.

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Note to science writers and editors:

Copies of the proceedings and peer evaluation report are available from the Office of Public Affairs, Johnson Space Center, Code AP3, Houston, Texas 77058. Illustrative material is also available upon request.

November 17, 1978

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
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AC 713 483-5111

Kay Ebeling

For Release:

RELEASE NO: 78-53

December 4, 1978

Frank Samonski, former Trenton resident, recently received the NASA Exceptional Service award for work on environmental control and life support for Project Mercury and the Space Shuttle.

Samonski is a Rutgers graduate.

At NASA, Samonski is responsible for design and development of spacecraft life support systems for the space agency. He also directs research and development of current and future programs in environmental and thermal control and life support.

The Exceptional Service medal is granted for significant achievement or service characterized by unusual initiative or creative ability. Samonski received the medal November 1 at the annual awards ceremony at the Johnson Space Center.

A 20-year NASA employee, Samonski is Chief of the Environmental Control and Life Support Systems Branch, at the Johnson Space Center in Houston. Samonski is a 1959 graduate of Rutgers University with a bachelor of science in Mechanical Engineering.

Samonski is an Associate Fellow of the American Institute of Aeronautics and Astronautics.



NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Kay Ebeling

For Release:

RELEASE NO: 78-53

December 4, 1978

James L. Dragg, former Norman resident, recently received NASA's Exceptional Service award for his management and technical contribution to the Large Area Crop Inventory Experiment, an inter-agency project co-ordinated by NASA.

Dragg is a graduate of the University of Oklahoma and Ohio State University.

At NASA, Dragg is responsible for technical and administrative direction on the project which uses satellite remote sensing to monitor world-wide crop production. Results of the 4-year experiment show that the space age techniques can be used to predict harvests with over 90 percent accuracy.

The Exceptional Service medal is granted for significant achievement or service characterized by unusual initiative or creative ability. Dragg received the award November 1 at the annual awards ceremony at the Johnson Space Center.

Dragg received his B.A. from the University in 1964. He was raised in Norman, Oklahoma.

A 13 year NASA employee, Dragg is chief of the Applications System Verification Test Branch of Earth Observations Division at the Johnson Space Center in Houston. As a manager of LACIE, he directed development and evaluation of Earth resources remote sensing technology.



NASA News

National Aeronautics and
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Kay Ebeling

For Release:

December 1, 1978

RELEASE NO: 78-53

Archie R. Beckett of Las Cruces, recently received the NASA Exceptional Service award for his work preparing White Sands Test Facility for Space Shuttle Orbiter propulsion systems testing.

Beckett is a 1951 New Mexico University graduate.

A recent retiree, Beckett was Site Activation Manager at the Las Cruces NASA facility. He was responsible for design fabrication and installation of equipment and materials that updated White Sands for Orbiter testing. The site is now being used for testing and qualification of Space Shuttle engines.

The Exceptional Service medal is granted for significant achievement or service characterized by unusual initiative or creative ability. Beckett received the award November 1 at the annual awards ceremony at the Johnson Space Center.

The Space Shuttle is a reusable space vehicle which will be an integral part of NASA's Space Transportation System. The STS will open doors for private and industrial use and applications of near space.

Beckett retired from NASA July 22, 1978, and is living in Las Cruces. His future plans are to specialize in sub-terranean and solar housing.



NASA News

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Kay Ebeling

For Release:

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RELEASE NO: 78-53

Forrest G. Hall, University of Houston graduate, received the NASA Exceptional Scientific Achievement award last month for his work with the Large Area Crop Inventory Experiment.

Hall is the son of Mrs. F. C. Hall of LaRue, Texas. At NASA, Hall is project scientist for LACIE, an inter-government project coordinated by NASA that uses satellite remote sensing to monitor global wheat production. Results of the 4-year experiment show that space age technology can be used to predict harvests with over 90 percent accuracy.

The Exceptional Scientific Achievement medal is given by NASA to any person whose unusually significant scientific accomplishments have contributed to the programs of NASA or other government agencies. Hall received the medal November 1 at the annual NASA awards ceremony in Houston.

Hall received his Ph.D. in Physics from the University of Houston in 1970. He is currently Chief Scientist with NASA's Earth Observation Division, at the Johnson Space Center in Houston. As LACIE project scientist, Hall was responsible for scientific integrity of the remote sensing technical approach.

Hall has been with NASA for 16 years.



NASA News

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For Release:

Kay Ebeling

December 4, 1978

RELEASE NO: 78-53

R. Bryan Erb, graduate of the University of Alberta, recently received NASA's Exceptional Service medal for his work on the Large Area Crop Inventory Experiment.

Erb is the son of Mr. and Mrs. R. N. Erb of Calgary.

At NASA, Erb is manager of LACIE, an inter-agency project, co-ordinated by NASA which uses satellite remote sensing to monitor global crop production. Results of the 4-year experiment show that the space age technology can be used to predict harvests with over 90 percent accuracy.

The Exceptional Service medal is awarded for significant achievement or service characterized by unusual initiative or creative ability. Erb received the medal November 1 at the annual awards ceremony at the Johnson Space Center.

A NASA employee for 19 years, Erb is responsible for organization and technical management of projects applying satellite data to resource problems on Earth. He works at the Johnson Space Center in Houston.

Erb received his M.S. in engineering in 1952. He spent his early years in Calgary.



NASA News

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Terry White

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RELEASE NO: 78-54

December 1, 1978
2 p.m. CST

JSC SIGNS IBM SUPPLEMENT

The NASA Johnson Space Center, Houston, has signed a supplemental agreement to its contract with IBM Federal Systems Division in Gaithersburg, Maryland, covering Shuttle Orbiter avionics software for orbital flight tests and early Shuttle operational phases.

The \$11,153,800 supplement brings the total value of the cost-plus-award-fee IBM contract to \$104,902,712. IBM will perform the work mainly at JSC, with some work done at Downey and Palmdale, California, and at Kennedy Space Center, Florida.

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Terry White

For Release

RELEASE NO: 78-55

December 1, 1978
2 p.m. CST

JSC EXTENDS ALPHA CONTRACT

The NASA Johnson Space Center, Houston, has signed a third one-year optional extension to its contract with Alpha Building Corporation covering minor construction and alteration of laboratory systems, facilities, utilities, roads, sewers, walks and other work at the Center.

The cost-plus-award-fee contract is valued at \$2,261,000 and will run from December 1, 1978 to November 30, 1979. The contract will be competitively solicited at the end of that year.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Terry White

For Release

RELEASE NO: 78-56

December 8, 1978
2 p.m. CST

JSC AWARDS SUPPORT CONTRACT TO LOCKHEED

The NASA Johnson Space Center, Houston, has awarded a cost-plus-award-fee contract to Lockheed Electronics Company of Houston for engineering and scientific support services in the Center's engineering and development and space/life sciences laboratories.

The contract period runs from December 1, 1978 to May 31, 1980, for the engineering and development portion and to October 31, 1979, for the space and life sciences portion.

Lockheed will employ approximately 1000 people for the contract valued at an estimated \$47,912,944. The contract was awarded on a non-competitive basis.

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NASA News

National Aeronautics and
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Terry White

For Release

RELEASE NO: 78-57

December 12, 1978
2 p.m. CST

JSC NEGOTIATES WITH OMEGA SERVICES FOR CENTER CUSTODIAL SUPPORT CONTRACT

The NASA Johnson Space Center, Houston, has selected Omega Services, Inc. of Houston, for negotiations that will lead to a contract for custodial support services at the Center.

Omega's proposed estimated cost and award fee for the first year, running January 1, 1979 to December 31, 1979, is \$1,716,000. The contract will have two additional one-year renewal options.

The contract will cover cleaning, floor care, trash removal and lightbulb replacement.

Other bidders were Abco-Community Pride, Houston; Atlas Building Maintenance, Houston; Interstate Cleaning Associates, Los Angeles; Porshia Alexander of America, Pasadena, California; Standfield Janitorial Services, Inc., Alexandria, Louisiana, and United Service Associates, Inc., Birmingham, Alabama.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

Charles Redmond

For Release

RELEASE NO: 78-58

December 18, 1978

SUPER GUPPY TO DELIVER SHUTTLE TRAINING EQUIPMENT TO JSC

One of the world's unique freight airplanes, the Super Guppy, will be delivering a high-fidelity Shuttle Orbiter crew compartment mockup to Ellington Air Force Base Wednesday morning. This marks the first time that the Super Guppy has ever been used for the delivery of Space Shuttle equipment.

The crew mockup, a detailed model of the cockpit and living quarters for NASA's Space Shuttle Orbiter, will be installed in one of the training areas at the Johnson Space Center. The mockup will be used for familiarization training for the Shuttle crews. The mockup, a non-working version, weighs 24,000 pounds and was built by Rockwell International, the prime contractor for the Space Shuttle Orbiter.

The Orbiter crew compartment mockup will be loaded on the Super Guppy at Los Alamitos Naval Air Station, near Los Angeles, on Tuesday morning and flown to Ellington with refueling stops scheduled at Davis-Monthan AFB, Tucson, and Dyess AFB, Abilene. The Super Guppy is expected to land at Ellington around 2 a.m. Wednesday.

- more -

Johnson Space Center employees will begin unloading the mockup around 7:30 Wednesday morning. The mockup will be loaded onto a flatbed truck and routed through Clear Lake City to the West Gate at the space center. The mockup will be unloaded at JSC Building 9A around 2 p.m.

The Super Guppy, a modified Boeing YC-97J, is the world's largest aircraft in terms of interior dimension. The fuselage of a 747 aircraft could be placed inside the Super Guppy if sectioned.

The Super Guppy was modified to its present configuration in August of 1965. It was test flown by the late NASA test pilot Joe Walker in late 1965 and first used by NASA in early 1966. The plane was modified and is presently owned by Aero Spacelines, Inc., of Goleta, California.

The plane is equipped with four Pratt & Whitney T34 turboprops and has flown over two million miles carrying cargo for the space agency. It was used extensively during the Apollo and Skylab missions. It last landed at Ellington AFB in June, 1976, on a mission from the Dryden Flight Research Center, California, to the Kennedy Space Center, Florida.

The Super Guppy crew will consist of pilot Paul Heyn, copilot Richard Peters, flight engineer Robert D'Agostini, and crew chief/loadmaster Anthony Scacchi, all Aero Spacelines employees. Accompanying the Aero Spacelines crew on the flight will be Johnson Space Center pilot Frank Marlo.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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Terry White

For Release

RELEASE NO: 78-59

December 18, 1978
2 p.m. CST

JSC NEGOTIATES WITH MCKINSEY FOR STUDY CONTRACT

The NASA Johnson Space Center, Houston, has selected McKinsey and Company of Dallas for negotiations leading to award of a contract for study of alternate organizational patterns for Space Transportation System (STS) operations at JSC. The study will assess current plans and alternatives in the transition from STS development and flight testing to mature operations with an eye toward reducing costs per flight.

Under terms of the anticipated firm fixed-price contract, McKinsey will conduct the studies at JSC and in its Dallas facility. The contract will have an estimated value of \$500,000.

Other bidders were: Booz-Allen and Hamilton, Bethpage, Maryland; Coopers and Lybrand, Houston; Cresap, McCormick and Paget, Washington, D.C.; Kelly Enterprises, Seattle, Washington; and Arthur D. Little, Inc., Cambridge, Massachusetts.

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NASA News

National Aeronautics and
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Terry White

For Release

RELEASE NO: 78-60

December 15, 1978
2 p.m. CST

JSC EXTENDS LINK SIMULATOR CONTRACT

The NASA Johnson Space Center, Houston, has extended for 30 months its contract with Link Division of Singer Company of Binghamton, New York, covering maintenance, modifications and operation of the Space Shuttle simulation complex at JSC. The "simcom" includes the Shuttle Procedures Simulator and the Shuttle Mission Simulator used in flight crew training.

The follow-on cost-and-award-fee contract is valued at \$33,277,574 and runs from July 31, 1978 through January 31, 1981.

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